

DECEMBER 1997  
VOLUME 39  
NUMBER 12

# STORM DATA



AND UNUSUAL WEATHER PHENOMENA  
WITH LATE REPORTS AND CORRECTIONS



**noaa** NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE  
DATA, AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER  
ASHEVILLE, N.C.

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**Cover:** A two-story home in Haines City is damaged by an F2 (Fujita Scale: wind speeds 113-157 mph) tornado on December 27, 1997. The tornado caused damage along a 5.8 mile path just east of Haines City, Florida. Notice the insulation can be seen in the yard and in tree branches. *(Photograph courtesy of Walt Zaleski, Warning Coordination Meteorologist, National Weather Service, Ruskin, FL)*

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### **STORM DATA**

(ISSN 0039-1972)

National Climatic Data Center

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**STORM DATA** is prepared, funded, and distributed by the National Oceanic and Atmospheric Administration (NOAA). The Outstanding Storms of the Month section is prepared by the Data Operations Branch of the National Climatic Data Center.

The Storm Data and Unusual Weather Phenomena narratives and Hurricane/Tropical Storm summaries are prepared by the National Weather Service. Monthly and annual statistics and summaries of tornado and lightning events resulting in deaths, injuries, and damage are compiled by cooperative efforts between the National Climatic Data Center and the Storm Prediction Center.

**STORM DATA** contains all confirmed information on storms available to our staff at the time of publication. However, due to difficulties inherent in the collection of this type of data, it is not all-inclusive. Late reports and corrections are printed in each edition.

Maps of the National Weather Service County Warning Areas which are used in the Storm Data and Unusual Weather Phenomena section will be printed in all editions.

Except for limited editing to correct grammatical errors, materials submitted are generally published as received.

Note: "None Reported" means that no severe weather occurred and "Not Received" means that no reports were received for this region at the time of printing.

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National Climatic Data Center  
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Asheville, NC 28801  
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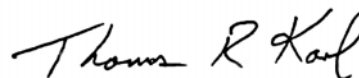
The editors of **STORM DATA** solicits your help in acquiring photographs (prints or slides; black and white, or color), maps, clippings, etc. of significant or unusual weather events (past or present). These could be for use in the "Outstanding Storms of the Month" or "Et Cetera" sections of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

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"I certify that this is an official publication of the National Oceanic and Atmospheric Administration and is compiled from information received at the National Climatic Data Center Asheville, North Carolina 28801-2733."



Thomas R. Karl  
Director,  
National Climatic Data Center

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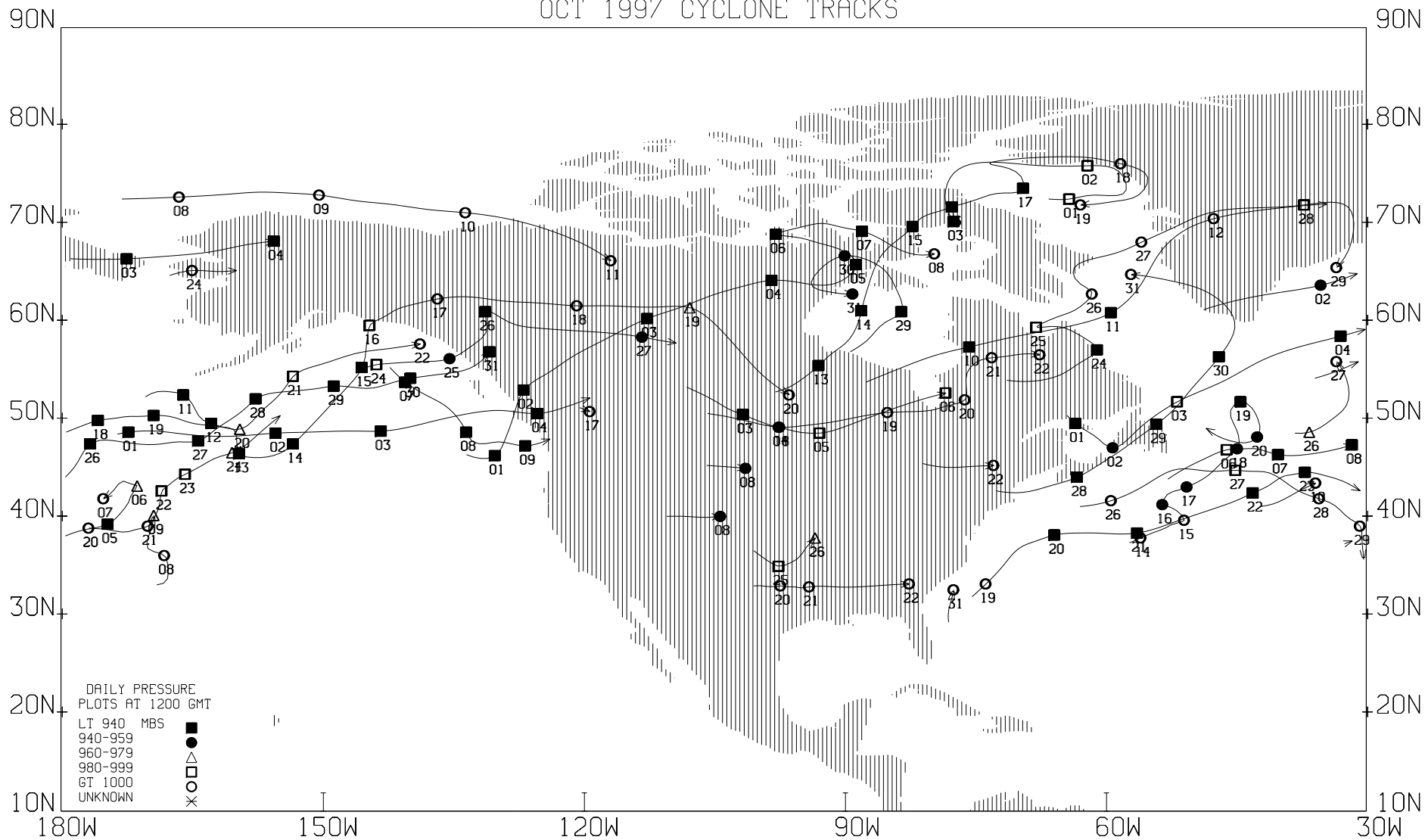
# December 1997 Confirmed Tornadoes



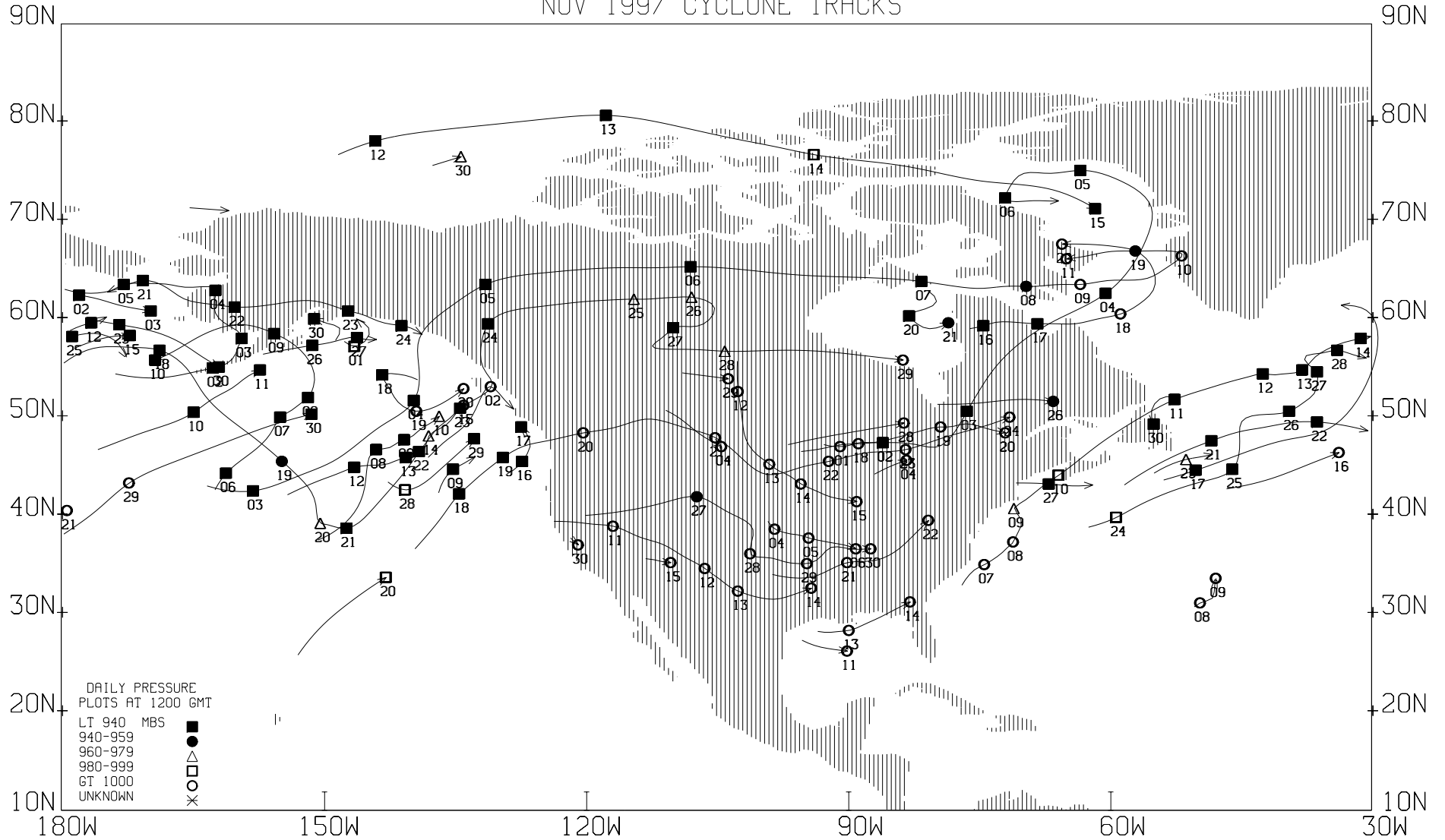
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Number	7	4	2	0	0	0	13

F Scale	
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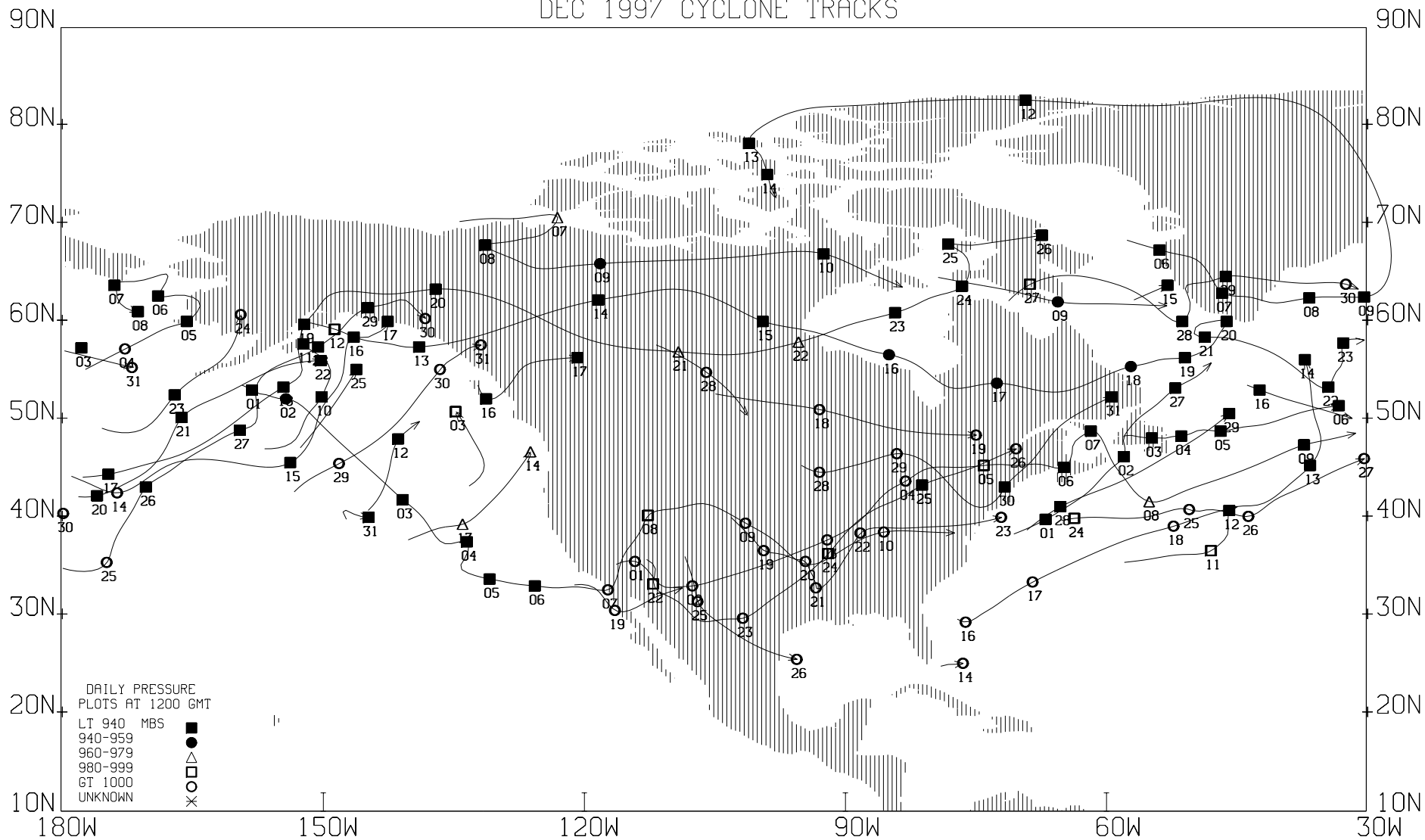
# OCT 1997 CYCLONE TRACKS



# NOV 1997 CYCLONE TRACKS



# DEC 1997 CYCLONE TRACKS





## OUTSTANDING STORMS OF THE MONTH

### F2 TORNADO CUTS PATH OF DESTRUCTION THROUGH CENTRAL FLORIDA

On December 27, 1997, conditions were favorable for the formation of severe weather in central Florida. Upper-level thermodynamics and severe weather indices signified an extremely unstable atmosphere. The National Weather Service in Ruskin, Florida issued a tornado warning at 3:30 P.M. At 4:08 P.M., an F2 tornado touched down 4.5 miles southwest of Haines City, FL. The tornado remained on the ground for 6 miles before dissipating 11 minutes later, 1.3 miles northeast of Haines City. The tornado moved northeast through the southeastern section of Haines City, destroying 75 and severely damaging 100 homes. Another 75 to 100 homes received minor damage. Many trees (mostly oak) were uprooted or snapped. Damage is estimated near \$6 Million of which 1.2 million occurred at Boone Middle School in eastern Haines City. As a result of the 38 minute lead time by the NWS, there were no fatalities and only 18 injuries. Wind blown debris caused most of the injuries of which 7 required hospitalization.

**Below Left:** Most of the second floor of this house lies in the yard, including the kitchen sink. Much of the damage to Haines City was similar to the photographs below.

*(Photographs courtesy of Walt Zaleski, Warning Coordination Meteorologist, National Weather Service, Ruskin, Florida)*



**Below:** An example of the type of damage produced by an F2 tornado. Automobiles are overturned and frame houses are severely damaged or destroyed.



# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property		

December 1997

## ALABAMA, North Central

**ALZ022>025-031>035-039**      **Pickens - Tuscaloosa - Jefferson - Shelby - Greene - Hale - Perry - Bibb - Chilton - Marengo**

**14      0900CST  
1430CST**      **0      0      0      0      Heavy Snow**

A strong low pressure system brought heavy snow to west-central Alabama, with accumulations up to five inches. It began in the western counties around 900 a.m. and moved through the central counties around noon. It finally began to taper off around 230 p.m. Many roads across the area became icy and there were numerous accidents due to the icy roads. Here are some snowfall totals: 5" in Pickens and Sumter; 4" in Greene and Marengo; 3" in Hale; 2" in Tuscaloosa, Bibb, Perry, and Shelby; and 1" in Jefferson and Chilton.

**ALZ001>010-016-018>021-028>029-037>038-047**      **Lauderdale - Colbert - Franklin - Lawrence - Limestone - Madison - Morgan - Marshall - Jackson - Dekalb - Cullman - Etowah - Calhoun - Cherokee - Cleburne - Clay - Randolph - Tallapoosa - Chambers - Lee**

**29      0100CST  
1100CST**      **0      0      0      0      Winter Storm**

A low pressure system developed in the Gulf of Mexico and moved ashore, bringing snow to the area. The snowfall began in the early morning hours in the western part of the state and moved to the east, ending by late morning. Snowfall amounts were in the one to two inch range in the Tennessee valley and eastern Alabama, with a few isolated amounts of three to four inches. Jackson, DeKalb, Clay and Cleburne counties reported three to four inches. There were a few reports of accidents, due to ice and snow on the roads.

## ALABAMA, Southeast

### **Geneva County**

**Eunola      24      0739EST      1      100      0      1      250K      Tornado (F1)**

Tornado touchdown one mile east of Geneva at the intersection of County Roads 4 and 6 damaging 6 to 10 residences. 10 to 15 homes and trailers damaged on J.P. Jones Road near Oak Grove. Numerous trees and power lines down. Considerable damage to Christmas decorations at Fowler Park in Geneva.

### **Houston County**

**Wicksburg      24      0817EST      3      300      0      5      500K      Tornado (F2)**

Tornado skipped through a mobile home park along County Road 9 and Market Street. Two mobile homes destroyed with more than a dozen damaged. Large power poles and trees toppled. Winds overturned small airplane off County Road 81 near Harmon School. A large tree blown onto a house on County Road 75. Residence destroyed on Alabama Highway 84 West in Wicksburg.

### **Dale County**

**Newton      24      0826EST      1.5      150      0      4      250K      Tornado (F1)**

Tornado touchdown in Currytown community trailer park along Dale County Road 49, Dean Road, and Alabama 134 between Pinckard and Midland City. Three mobile homes were destroyed and four were heavily damaged. 16-18 residences sustained structural damage. Six barns were leveled and four were damaged. Numerous large trees and power poles down.

## ALABAMA, Southwest

### **Mobile County**

**Semmes      24      0445CST  
0446CST      0      0      1.5K      Thunderstorm Wind (G50)**

Several large limbs were blown down near the intersection of Howells Ferry and Snow roads just south of Semmes.

### **Mobile County**

**Tillmans Corner      26      1730CST  
1732CST      0      0      Hail (0.75)**

Dime size hail fell around the Tillmans Corner area.

## ALASKA, Northern

**AKZ003-006>007-009**      **Lower Kobuk Valley-Northern Seward Peninsula - Southern Seward Peninsula-Eastern Norton Sound - Tanana Valley - St. Lawrence Island-Bering Strait Coast**

**04      0500AST  
05      0500AST      0      0      High Wind (G57)**

**AKZ001-006-010**      **Arctic Slope Coastal - Southern Seward Peninsula-Eastern Norton Sound - Yukon Delta**

**04      0600AST  
05      1700AST      0      0      Blizzard**

A strong storm moved northeast over the Bering Sea bringing Blizzard conditions and High Winds to parts of Alaska's West Coast. Blizzard: Zone 1: Point Lay only; Zone 10: Saint Marys, Emmonak; Zone 6: Nome, Unalakleet. Conditions may also have occurred at: Zone 3: Shishmaref, Zone 9: Gambell. High Wind: Zone 3: Kotzebue 37 kt sustained, gust 43 kt; Zone 6: Unalakleet 41 kt sustained, gust 49 kt; Zone 9: Gambell: 37 kt sustained, gust 46 kt. Additionally the associated weather front moving north over mainland Alaska also caused strong winds in the Alaska Range: Zone 7: Big Delta: 42 kt sustained, gust 57 kt.



# Storm Data and Unusual Weather Phenomena

December 1997									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Character of Storm
<b>ALASKA, Northern</b>									
<b>AKZ007</b>	<b>Tanana Valley</b>								
	18	0500AST 2350AST			0	0			High Wind (G46)
Strong stationary high pressure over Canada and a large storm moving from the Gulf of Alaska northwest to the southwest coast of Alaska, produced strong east winds at Big Delta, Max winds: 35 kt sustained, gust 46 kt.									
<b>AKZ009</b>	<b>St. Lawrence Island-Bering Strait Coast</b>								
	30	1800AST			0	0			Blizzard
	31	0100AST							
The weather front associated with a low pressure center in the northwest Bering Sea moved north over Saint Lawrence Island producing Blizzard conditions at Gambell and Savoonga, but not over the Bering Strait Coast.									
<b>AKZ001</b>	<b>Arctic Slope Coastal</b>								
	30	2300AST			0	0			Extreme Windchill
	31	2359AST							
High pressure over the Beaufort Sea and moderate complex low pressure over southern Alaska produced winds over 20 mph and cold airtemperatures resulting in Wind Chill temperatures of 90 below over the western Arctic Coast between Lisburne and Icy Cape, notably at Point Lay. Event continued in Jan 1998.									
<b>ALASKA, Southeast</b>									
<b>AKZ025</b>	<b>Juneau Borough-Admiralty Island-Icy Strait Area</b>								
	02	0600AST 1400AST			0	0			Heavy Snow
Snow showers produced 6-8 inches of snow over the Mendenhall valley during an eight-hour period.									
<b>AKZ022</b>	<b>Cape Fairweather To Cape Suckling-Coastal Area</b>								
	03	1700AST 2300AST			0	0			High Wind (G64)
A peak wind of 64 kt occurred at Yakutat airport just before a strong Pacific occlusion passed through the area.									
<b>AKZ023-027</b>	<b>Cape Decision To Cape Fairweather-Coastal Area - Southern Southeast Alaska Ernest Sound To Dixon Entrance</b>								
	10	0500AST 1530AST			0	0			High Wind (G74)
IA n intense low pressure system from the Northeast Pacific brought strong winds to the southern portion of the panhandle. Peak wind gusts reported were 74kt in Craig, 53kt in Klawock, 65kt in Ketchikan, 58kt in Hydaberg, and 47kt at Cape Decision. There was an unconfirmed report of structural damage--loss of part of a building--in Craig.									
<b>AKZ027</b>	<b>Southern Southeast Alaska Ernest Sound To Dixon Entrance</b>								
	12	0500AST 1800AST			0	0			High Wind (G61)
High winds occurred in southern Southeast Alaska when a strong low moved up the Gulf of Alaska coast. Peak wind gusts reported were 61kt at Metlakatla Harbor, 44kt at Annette Island Harbor, 61kt at Ketchikan airport, and 58kt at Hydaberg.									
<b>AKZ023-025-027&gt;028</b>	<b>Cape Decision To Cape Fairweather-Coastal Area - Juneau Borough-Admiralty Island-Icy Strait Area - Southern Southeast Alaska Ernest Sound To Dixon Entrance - Dixon Entrance To Cape Decision-Coastal Area</b>								
	18	0500AST 2125AST			0	0			High Wind (G49)
A intense low pressure system offshore of the panhandle produced strong easterly winds through the inner channels of Southeast Alaska and along the gulf coast. Peak wind gusts reported were 46kt at Cape Spencer, 47kt at Cape Decision, 49kt at the federal building in Juneau, 45kt at the Ketchikan airport, and 48kt at Hydaberg.									
<b>AKZ027&gt;028</b>	<b>Southern Southeast Alaska Ernest Sound To Dixon Entrance - Dixon Entrance To Cape Decision-Coastal Area</b>								
	21	1600AST			0	0			High Wind (G46)
	22	0600AST							
Strong and gusty winds occurred over the southern panhandle as an occlusion moved across the area. Peak wind gusts reported were 46kt at Hydaberg and 44kt at Metlakatla Harbor.									
<b>AKZ028</b>	<b>Dixon Entrance To Cape Decision-Coastal Area</b>								
	27	1315AST 1800AST			0	0			High Wind (G51)
High winds occurred over the southern outer coast ahead of a strong occluded front. The peak wind recorded at Hydaberg was 51kt.									

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
December 1997									
<b><u>ALASKA, Southern</u></b>									
<b>AKZ019&gt;020</b>	<b>Western Alaska Peninsula - Aleutian Islands</b>								
02	1200AST				0	0			High Wind (G43)
03	1500AST								
Southeasterly winds ahead of a moderate front gusted up to 50 mph across the Aleutians and Alaska Peninsula.									
<b>AKZ010&gt;011-019&gt;021</b>	<b>Yukon Delta - Kuskokwim Delta - Western Alaska Peninsula - Aleutian Islands - Pribilof Islands</b>								
03	1800AST				0	0			High Wind (G45)
05	0300AST								
A strong 948mb low moved into the central Aleutians late Wednesday, through the Pribilofs early Thursday, finally weakening near Nunivak Island early Friday. A moderate front elongated eastward ahead of the storm...finally weakening in a north northwest-south southeast line along the central North Gulf Coast early Friday. Brisk southeasterly winds preceded the front. Strong westerly winds were reported along the southwest side of the storm. Gusts ranged from 50 to near 65 mph across the area...with strongest winds observed in the central Aleutians.									
<b>AKZ020</b>	<b>Aleutian Islands</b>								
08	0000AST				0	0			High Wind (G45)
09	1800AST								
Pressure differences between strong high pressure in eastern Siberia and moderate low pressure in the eastern Bering Sea brought brisk northwest winds to the central and western Aleutians where speeds reached 52 mph.									
<b>AKZ017-019</b>	<b>Central Gulf Coast - Western Alaska Peninsula</b>								
10	0000AST				0	0			High Wind (G53)
	2300AST								
A strong 954mb northeast Pacific storm brought brisk northwest wind gusts to 52 mph across the Alaska Peninsula. Several ships just south of the area reported thunderstorms and even stronger winds. The front associated with the storm crossed the central North Gulf Coast midday Wednesday, bringing wind gusts up to 61 mph to the area.									
<b>AKZ017</b>	<b>Central Gulf Coast</b>								
13	1800AST				0	0			High Wind (G40)
16	1500AST								
Cold, arctic air winds along the north and west side of a nearly stationary 980mb low parked near Middleton Island gusted between 45 and 50 mph at Whittier and Seward...both on the east side of the Kenai Peninsula.									
<b>AKZ020</b>	<b>Aleutian Islands</b>								
14	0000AST				0	0			High Wind (G60)
	2100AST								
An intense 960mb storm moved to within 180 miles south southeast of the Komandorskye Islands...bringing southeast wind gusts near 70 mph to the extreme western Aleutians.									
<b>AKZ013-015-017&gt;018</b>	<b>Susitna Valley - Cook Inlet - Central Gulf Coast - Kodiak Island-Eastern Alaska Peninsula</b>								
18	0000AST				0	0			High Wind (G72)
19	1000AST								
A moderate front curving north through the Gulf of Alaska brought wind gusts of 83 mph to Middleton Island between 10 and 11am. Strong easterly winds, reaching speeds between 55 and 65 mph preceded the front around Cordova and over portions of Prince William Sound (gusts of 81 mph and seas 25 ft reported by the oil tanker "Prince William Sound"). Brisk northerly winds also blew across areas of southcentral Alaska and Kodiak Island around the parent 960 mb low center, which tracked just east of Kodiak Island, weakening late Thursday and Friday. At the Portage Visitor Center, wind gusts reached 71 mph just before noon Thursday. Further north at Palmer, northeast wind gusts originating off of the Matanuska Glacier reached speeds of 59 mph. On the back side of the low, brisk west to northwest winds were reported. Gusts reached 69 mph at Booth Lake on Kodiak Island early Thursday and 46 mph at the Homer airport between 6 and 7am Friday.									
<b>AKZ013-015-017&gt;019</b>	<b>Susitna Valley - Cook Inlet - Central Gulf Coast - Kodiak Island-Eastern Alaska Peninsula - Western Alaska Peninsula</b>								
21	0000AST				0	0			High Wind (G40)
	2359AST								
A strong 958 mb low moved from the northcentral Pacific toward Sand Point where it began to weaken late Sunday. The front associated with the storm elongated northeastward through the Gulf of Alaska...making landfall late Sunday. Brisk northeasterly winds preceded the front...reaching speeds of 46 mph across many areas adjacent to the Gulf of Alaska and along the western Alaska Peninsula.									
<b>AKZ018&gt;019</b>	<b>Kodiak Island-Eastern Alaska Peninsula - Western Alaska Peninsula</b>								
23	0000AST				0	0			High Wind (G45)
	2359AST								
Brisk easterly winds preceded a strong 958 mb low as it moved through the Alaska Peninsula from the north Pacific. Gusts up to 52 mph were recorded on both Kodiak Island and the Alaska Peninsula.									

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## ALASKA, Southern

### **Ck Inlt Susitna(C) / Homer(C)**

Kenai

23 0000AST  
31 2359AST

0 0 50K Flood

Minor flooding occurred on the Kenai river downstream from Soldotna just below Big Eddy. The flooding was due to water backing up due to an ice jam. The jam formed in below zero temperatures, which created frazil ice. The frazil ice flowed downstream and came in contact with the ice cover, constricting the flow of the Kenai River. As of the 31st, the Kenai Borough reported damage to numerous docks and fish platforms due to high water and ice.

AKZ015>020

### **Cook Inlet - Bristol Bay Coastal - Central Gulf Coast - Kodiak Island-Eastern Alaska Peninsula - Western Alaska Peninsula - Aleutian Islands**

26 1200AST  
29 1200AST

0 0 High Wind (G72)

Brisk northwest winds were observed across the area as strong, cold high pressure across the mainland coupled with an exiting, moderate low pressure center in the southeastern Gulf of Alaska.

AKZ011-016-  
019>020

### **Kuskokwim Delta - Bristol Bay Coastal - Western Alaska Peninsula - Aleutian Islands**

28 1800AST  
31 2359AST

0 0 High Wind (G50)

Brisk southeasterly winds preceded a moderate front as it worked its way eastward across the Bering and Alaska Peninsula. Brisk north to northwesterly winds were also observed on the "back side" of a frontal low, that developed along the western tip of the Alaska Peninsula midday Wednesday, tracking into Kodiak Island early Thursday. By Friday, the low had split...with one part just south of Middleton Island and the other migrating southeastward out of the Gulf of Alaska.

## AMERICAN SAMOA

NOT RECEIVED.

## ARIZONA, Central and Northeast

AZZ004-015>017

### **Kaibab Plateau - Western Mogollon Rim - Eastern Mogollon Rim - White Mountains**

06 0300MST  
07 2300MST

0 0 0 0 Heavy Snow

Heavy snow accumulated across the higher elevations of Northern Arizona. Accumulations, by zone, included: White Mountains: 10-25 inches, Eastern Mogollon Rim: 6-8 inches, Kaibab Plateau: 6-7 inches, Western Mogollon Rim including Flagstaff (above 8000 feet): 12-18 inches.

AZZ004-006-  
008>009-011-  
015>017

### **Kaibab Plateau - Grand Canyon Country - Yavapai - Northeast Plateaus And Mesas - Chuska Mountains And Defiance Plateau - Western Mogollon Rim - Eastern Mogollon Rim - White Mountains**

21 1800MST  
23 0300MST

0 0 0 0 Winter Storm

A major winter storm hit most of Northern Arizona on December 21 and 22. Heavy snow and blowing snow, closed several state roads along the Mogollon Rim through the period. Snow totals, by zone, included:

White Mountains.....	8-20 inches.
Western Mogollon Rim.....	10-20 inches.
Eastern Mogollon Rim.....	10-18 inches.
Yavapai County (above 5000 ft.)	10-15 inches.
Grand Canyon Country.....	6-12 inches.
Kaibab Plateau.....	6 - 8 inches.
Chuska Mountains and Defiance Plateau.....	6 - 8 inches.
Northeast Plateaus and Mesas	6 - 8 inches.

AZZ016>017

### **Eastern Mogollon Rim - White Mountains**

24 0500MST  
2000MST

0 0 0 0 Heavy Snow

Heavy snow fell on Christmas Eve with 4-8 inches accumulating over the Eastern Mogollon Rim and White Mountains.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## ARIZONA, Northwest

### **AZZ031 Western Pima County**

11 1000MST 0 0 15K High Wind (G42)  
1800MST

Strong winds blowing down the Colorado River Valley produced light damage in Bullhead City, AZ. Although wind gusts of only 48 mph were recorded at the Laughlin-Bullhead Airport, several awnings were broken or ripped from homes and a few sheds were damaged.

### **AZZ003 Northwest Deserts**

21 1800MST 0 0 Heavy Snow  
22 1200MST

A Pacific storm that moved across southern California and southern Arizona left between 18 and 24 inches of snow in the Hualapai Mountains of Mohave County during an 18 hour period.

## ARIZONA, South

### **AZZ032 Tohono Oodham Nation**

01 0800MST 0 0 Heavy Snow  
1500MST

6-8 inches of snow was reported at Kitt Peak.

### **Pinal County**

20 S Dudleyville 07 1325MST 0 0 Hail (1.00)  
1330MST

### **AZZ035 Cochise County**

21 0300MST 0 0 Fog  
0900MST

Dense fog was reported at Douglas and in the Sulphur Springs valley between Willcox and Douglas.

### **AZZ019-033-035 Northern Greenlee - Tucson Metro/Marana/Green Valley - Cochise County**

22 0300MST 0 0 Heavy Snow  
1500MST

A strong storm system brought heavy snow to the higher elevations of southeast and east-central Arizona. Some reported snowfall amounts for the storm included: 30 inches at Hannagan Meadow; 21 inches on Mt. Lemmon; 5 inches in Sonoita; 2 inches in Bisbee and Tombstone.

## ARIZONA, Southwest

NONE REPORTED.

## ARKANSAS, Central and North Central

NONE REPORTED.

## ARKANSAS, East

### **ARZ008-017>018- Randolph - Lawrence - Greene - Craighead**

026 30 1600CST 0 0 5K High Wind (G40)  
1800CST

Strong winds in association with a cold front went through northeast Arkansas. The winds, between 40 and 45 mph, downed tree limbs in Randolph, Lawrence, Greene and Craighead counties. Power lines were also knocked down in Craighead county.

## ARKANSAS, Northwest

NONE REPORTED.

## ARKANSAS, Southeast

NONE REPORTED.

## ARKANSAS, Southwest

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property		

December 1997

## CALIFORNIA, Extreme Southeast

NONE REPORTED.

## CALIFORNIA, North Central

**CAZ013>014-063-068>069 Shasta Lake/North Shasta County - Burney Basin/Eastern Shasta County - Mountains Southwest Shasta County To Northern Lake County - Mt Shasta/Western Plumas County - West Slope Northern Sierra Nevada**

07 0800PST 0 0 Winter Storm  
08 1600PST

The first major winter storm of the season produced snowfall accumulations of three to four feet at elevations above 8000 feet, 1.5 to 2 feet along the higher elevations of Interstate 80 and U.S. Route 50, and snowfall rates up to 3 inches/hour. Transportation officials had to temporarily close Interstate 80 for a few hours.

**CAZ017 Southern Sacramento Valley**

11 0710PST 5 26 1.5M Fog

Patchy dense fog was a main contributing factor in a major chain reaction collision on northbound Interstate 5 near Lambert, CA, 17 miles south of downtown Sacramento. The crash involved 8 tractor trailers, 1 tanker truck, and 28 automobiles and small trucks. The five fatalities were burn victims caught in the fires from exploding fuel tanks. F5VE, M47VE, M38VE, M?VE, ??VE

**CAZ018>019 Carquinez Strait And Delta - Northern San Joaquin Valley**

21 1800PST 0 0 High Wind (G40)  
22 1000PST

50 mph steady state winds were officially observed at Travis AFB, CA. Most damage consisted of downed trees.

## CALIFORNIA, Northeast

**CAZ073 Mono**

05 0400PST 0 0 Winter Storm  
1900PST

12-16 inches of snow fell at the Mammoth Mountain Ski Area (9600 feet) in about a 15 hour period.

**CAZ072 Greater Lake Tahoe Area**

07 0600PST 0 0 Winter Storm  
08 0600PST

The following Lake Tahoe ski resorts reported heavy snow over a 24 hour period: Sugar Bowl 19 inches, Kirkwood 30-42 inches, Sierra at Tahoe 30-35 inches, Northstar 16-26 inches, Mount Rose 24 inches and Alpine Meadows 24-32 inches.

**CAZ072 Greater Lake Tahoe Area**

07 0800PST 0 0 Winter Storm  
08 0800PST

16 inches of snow fell at the Truckee Airport in a 24 hour period. 5 inches per hour fell in a two hour period from midnight to 0200 on the 8th.

**CAZ073 Mono**

07 0830PST 0 0 Winter Storm  
08 0830PST

18 inches of snow fell in a 24 hour period at the town of Mammoth Lakes. Most fell from 1400 (on the 7th) to 0700.

**CAZ073 Mono**

07 0855PST 0 0 Winter Storm  
08 0855PST

12 inches of snow fell at Crowley Lake in a 24 hour period. Most of the snow fell between 1500 and 1900 on the 7th.

**CAZ071 Lassen/Eastern Plumas/Eastern Sierra**

07 1040PST 0 0 Winter Storm  
08 1040PST

14 inches of snow accumulated during a 24 hour period over Yuba Pass (Highway 49) in Sierra County.

**CAZ072 Greater Lake Tahoe Area**

07 1050PST 0 0 Winter Storm  
08 1050PST

24 hour snowfall accumulation at the Tahoe Valley Airport (near South Lake Tahoe) was about 14 inches.

**CAZ072 Greater Lake Tahoe Area**

07 1630PST 0 0 Heavy Snow  
1930PST

10 inches of snow was reported at Homewood. The snow accumulated in about a three hour period.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
<b><u>CALIFORNIA, Northeast</u></b>									
<b>CAZ072</b>		<b>Greater Lake Tahoe Area</b>							
	07	1700PST			0	0			Winter Storm
	08	0500PST							
	24 inches of snow fell in about a 12 hour period over Donner Summit (Interstate 80).								
<b><u>CALIFORNIA, Northwest</u></b>									
<b>CAZ003&gt;004-076</b>		<b>North Coast Interior - Upper Trinity River - Mendocino Interior</b>							
	07	2000PST			0	0			Heavy Snow
	08	0915PST							
	Heavy snow fell across much of the higher terrain of Northwest California. Five to seven inches fell above 3800 feet in Mendocino and Trinity Counties. Two inches fell as low as 1700 feet in Humboldt County.								
<b>CAZ076</b>		<b>Mendocino Interior</b>							
	13	0655PST			0	0			Other
	Sustained winds of 30-40 mph with gusts to 56 mph.								
<b>CAZ004</b>		<b>Upper Trinity River</b>							
	14	1200PST			0	0			Heavy Snow
		1800PST							
	Four to six inches of snow fell across Trinity County above 4000 feet.								
<b>CAZ001-004</b>		<b>Redwood Coast - Upper Trinity River</b>							
	20	0700PST			0	0			Winter Storm
		1400PST							
	Small hail accumulated to a depth of an inch on US Highway 101 north of Orick (35N Eureka) and closed the road for a time. Light freezing rain fell in several valleys in Trinity County. No significant accumulations were reported.								
<b><u>CALIFORNIA, South Central</u></b>									
<b>CAZ024</b>		<b>Kern County Mountains</b>							
	04	0926PST			0	0	50K		High Wind (G40)
		1300PST							
	Pre-frontal winds downed 10 power poles in the Bear Valley area of the Tehachapi Mountains. Gusty wind to 40 MPH on the Southern San Joaquin Valley floor downed numerous trees and powerlines in and around Bakersfield.								
<b>Kern County</b>									
Lebec	05	1700PST			1	0			Heavy Rain
	In heavy rain, a car hydroplaned off Interstate-5 near Lebec into a swollen creek adjacent to the road. Before a rescue could be accomplished one of the vehicle's occupants was swept downstream. F65VE								
<b>CAZ022</b>		<b>Southern Sierra Nevada-Yosemite National Park To Kings Canyon</b>							
	05	1800PST			0	0			Heavy Snow
	06	0600PST							
	12 inches of snow at 8000 feet...6" snow by 0500 PST at 7000 feet.								
	Other snow amounts included 3 inches at Castaic on the Grapevine (Interstate-5) by Saturday morning the 6th.								
<b>CAZ022</b>		<b>Southern Sierra Nevada-Yosemite National Park To Kings Canyon</b>							
	05	1800PST			0	0			Heavy Snow
	08	0600PST							
	Over the three day period 3.5 feet of new snow fell in the higher elevations of the Southern Sierra Nevada...CA Zone 22.								
<b>CAZ020</b>		<b>Central San Joaquin Valley</b>							
	07	1600PST			0	0			Winter Storm
	08	0600PST							
	With frontal passage and resulting showers, the snow level in the Southern Sierra Nevada dropped to 3000 feet by Monday morning the 8th. At elevations below 7000 feet up to 18 inches of new snow fell...and over 30 inches above 7000 feet. Shaver Lake at 5000 feet received 6 inches of new snow.								
<b>Fresno County</b>									
Kerman	07	1645PST			0	0	5K		Urban/Sml Stream Fld
	Minor flooding in the Kerman area due to locally heavy rain from embedded thunderstorms.								
<b>Fresno County</b>									
Selma	07	1700PST			0	0	5K		Urban/Sml Stream Fld
	Minor flooding in the Selma area due to locally heavy rain with embedded thunderstorms.								

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## CALIFORNIA, South Central

### **Kings County**

**Hanford**      **07**      **1700PST**      **0**      **0**      **3K**      **Thunderstorm Wind**  
Gusty wind with a thunderstorm passage downed a tree in Central Hanford.

### **Tulare County**

**Visalia**      **07**      **1730PST**      **0**      **0**      **10K**      **Thunderstorm Wind**  
Thunderstorm passage through the Visalia area brought gusty wind. Tree limbs were downed in the middle part of town causing some traffic flow problems. A barn roof was damaged on the west side of Central Visalia from the wind. As a result of the gusty wind and downed tree limbs, power lines were also felled causing power outages in the vicinity.

### **Tulare County**

**Woodlake**      **07**      **1830PST**      **0**      **0**      **5K**      **Urban/Sml Stream Fld**  
**1930PST**  
Minor flooding in the Woodlake area due to locally heavy rain from embedded thunderstorms in a front.

A rather vigorous frontal passage through the Central San Joaquin developed some minor wind and flood damage problems for Fresno...Kings...and Tulare Counties. Embedded thunderstorms within the front during the late afternoon and early evening hours brought gusty wind as well as locally heavy rains. WSR-88D reflectivity values reached as high as 64 dBz and tops to 25K feet.

### **CAZ020**

#### **Central San Joaquin Valley**

**10**      **0400PST**      **0**      **2**      **Fog**  
**0930PST**

Dense fog resulted in a known accident 6 miles south of Fresno on Highway 41 at 0750 PST.

### **CAZ020>021**

#### **Central San Joaquin Valley - Southern San Joaquin Valley**

**10**      **0700PST**      **0**      **0**      **Extreme Cold**  
A substantial freeze occurred in the Central and Southern San Joaquin Valley as temperatures dropped to the mid 20s to low 30s. Navy Lemoore reported 27 degrees...Fresno and Merced both at 31. Many outlying agricultural locations were in the middle to upper 20s.

### **CAZ020>021**

#### **Central San Joaquin Valley - Southern San Joaquin Valley**

**24**      **0200PST**      **0**      **0**      **Extreme Cold**  
**26**      **0800PST**  
Note narrative on fog for same time period.

### **CAZ020**

#### **Central San Joaquin Valley**

**26**      **0000PST**      **0**      **0**      **Fog**  
**1000PST**

Three consecutive mornings saw temperatures in the mid 20s for the Central and Southern San Joaquin Valley agricultural districts. Hanford dropped to 24 degrees with several other locations showing similar numbers in the center portion of the valley and the mid to upper 20s in the citrus belts. At the same time and a bit infrequent, fog formed and roads iced with the combination of low temperatures and available moisture from dense fog.

### **CAZ021**

#### **Southern San Joaquin Valley**

**26**      **0700PST**      **0**      **0**      **Fog**  
**1000PST**

Dense fog formed late in the morning in the Southern San Joaquin Valley around Tulare. California Highway Patrol instituted the "pace" program because of the danger at 0830 PST.

## CALIFORNIA, Southeast

### **CAZ026**

#### **Owens Valley**

**05**      **1800PST**      **0**      **0**      **Heavy Snow**  
**06**      **1800PST**

A moist Pacific low brought heavy snow to the east slopes of the southern Sierra Nevada with approximately two feet of new snow falling at Aspendell, CA in a 24 hour period.

## CALIFORNIA, Southwest

### **San Bernardino County**

**Adelanto**      **06**      **0100PST**      **0**      **0**      **Urban/Sml Stream Fld**  
**1200PST**

### **Orange County**

**Central Portion**      **06**      **0300PST**      **0**      **0**      **17.7M**      **Flood**  
**1200PST**



# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## CALIFORNIA, Southwest

### Riverside County

El Cerrito 06 0300PST 1800PST 0 0 Urban/Sml Stream Fld

### San Diego County

1 W North Is Nas 06 1800PST 1830PST 0 2 Thunderstorm Wind (G50)

A slow moving low pressure center off the coast, spawned late night showers and thunderstorms. The showers continuously developed off the coast, and moved inland over central portions of Orange County, starting before daybreak on the sixth, and lasting until the early morning hours on the seventh. Rainfall generally ranged from 4 to 8 inches across the area, resulting in widespread flooding. One observer in Mission Viejo reported 10 inches of rain from this event. The hardest hit area was the coastal plain southwest of the Santa Ana Mountains. It was the heaviest rain recorded in at least 70 years. Collapsing hillsides, and raging water, triggered flooding that forced scores of people to flee their homes, while others climbed atop stalled automobiles to escape the rising waters. A Local State of Emergency was declared, as mud and debris flows damaged hundreds of homes and businesses, and halted transportation. Storm debris littered the coastline. Some areas, like the Rhine Channel in Newport Bay, were clogged to the point where they resembled a landfill. Total damage estimates for the county included \$5.6 million to private homes and businesses, and over \$12 million to public facilities, and for debris clean-up. Some heavy rain did spill over the Santa Ana Mountains, resulting in flooding in the community of El Cerrito, in western Riverside County. Over 4 inches of rain caused moderate to heavy damage to 8 homes and minor damage to 10 others. Farther north in the Victor Valley of San Bernardino County, heavy rains caused local flooding in many communities. Heavy downpours in Adelanto shortly after midnight, flooded an apartment complex, forcing residents to evacuate, and sent a river of mud and water a foot deep running down some streets. During the evening of the sixth, a pair of teenage lobster fisherman were caught in a storm a mile west of the beach at North Island Naval Air Station. Swells more than 6 feet high capsized their 18-foot skiff. They were rescued several hours later with cuts and bruises.

### San Diego County

.2 W Del Mar to Del Mar 08 0700PST 0710PST 0 0 Funnel Cloud

A weather spotter observed a funnel cloud which developed just offshore of Del Mar and moved inland.

CAZ042-048>049-056>058

**Orange County Coastal Plain - San Bernardino County Valley/The Inland Empire - Riverside County Valley/The Inland Empire - Riverside County Mountains - Santa Ana Mountains And Foothills - San Diego County Mountains**

10 0800PST 2 0 High Wind (G83)  
12 1800PST  
M31OU, M44OU

CAZ043

**San Diego County Coasts**

11 0800PST 0 0 Wind  
1400PST

Strong surface high pressure over the western United States forced gusty offshore flow from passes to the coast. Strong upper-atmospheric flow augmented the surface pressure gradients, resulting in particularly damaging Santa Ana wind conditions, especially during the late night and morning hours. The winds toppled hundreds of trees, damaged scores of homes and vehicles, blew big-rigs off the road, raised clouds of choking dust and sand, restricting visibility, and snapped power poles and lines, sending tens of thousands of customers into darkness. A wind gust of 96 mph was clocked by the Highway Patrol near Pine Valley, in San Diego County at 8:15 am on the twelfth. A truck window shattered here, and two big-rigs were blown over. Two construction workers were killed, one in Riverside, when a wind-blown panel knocked him off a water tower, and another in Irvine, when he was struck in the head by a piece of wind-blown plywood. A roof was blown off a mobile home, and two house fires were ignited by wind-blown power lines in Santa Ana. Even Fashion Island's 112-foot Christmas tree was stripped of its world's-largest-tree title, when a gust sheared 30 feet off the top. In the mountain communities of Riverside County, falling trees damaged homes and power poles, and closed some roads. A fish farm in Sun City reported in excess of \$1 million in structural damages. Some 5.4 million pounds of avocados were blown off the trees, of which 25% were not recovered. In Coronado, 4 boats were destroyed and another 4 boats and 15 docks were damaged, when boats broke loose from their moorings in gale-force winds. Farther north, more than 20 miles off the mainland, 6 boats were driven ashore, and others sank at their moorings in Avalon Harbor, on the east side of Catalina Island.

CAZ048>049-057

**San Bernardino County Valley/The Inland Empire - Riverside County Valley/The Inland Empire - Santa Ana Mountains And Foothills**

19 0300PST 1 1 High Wind (G80)  
1600PST

Strong surface gradients set up gusty Santa Ana winds below selected passes and canyons across Southern California. In Riverside, a 60-foot tree seriously damaged a home and destroyed a car when it was blown over in the high wind. Near Pedley, a man lost control of his van because of a strong wind gust, resulting in his death, and injury to his passenger. The wind knocked out power to 9500 homes and businesses in parts of Ontario, Rancho Cucamonga, Fontana, and Chino, and raised huge clouds of blowing dust and sand in Redlands. M35VE

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	December 1997	
					Killed	Injured	Property	Crops	Character of Storm

## CALIFORNIA, Southwest

### Orange County

Huntington Beach	21	1340PST 1345PST	1	30	0	0	15K		Tornado (F1)
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Thunderstorms in advance of a strong low pressure trough, spawned a tornado that briefly touched down off of Huntington Beach, and moved onshore, crossing Highway 1, into Huntington Harbor. The twister ripped at least 6 boats from their moorings, damaged trees, ripped a 40-foot metal light pole out of the ground, tossed a 150 pound iron bench into a spa, and ripped a 25 foot section of roof from a home. Damage to the roof alone was estimated at \$15,000.

CAZ048>049-057-061

### San Bernardino County Valley/The Inland Empire - Riverside County Valley/The Inland Empire - Santa Ana Mountains And Foothills - Coachella Valley

21	2200PST				0	0			High Wind (G70)
22	1500PST								

A rapidly deepening low pressure center over southwest Arizona produced strong gradient winds through many valley areas. The fierce winds toppled at least 6 trucks on stretches of the I-15 and 60 freeways in San Bernardino and Riverside Counties. In the Coachella Valley, the wind uprooted numerous trees in Palm Desert, forcing the closure of Country Club Road during the morning, and overturned several big-rig trucks near Indio. Desert Hot Springs also reported several trees and signs down.

CAZ048>049-057

### San Bernardino County Valley/The Inland Empire - Riverside County Valley/The Inland Empire - Santa Ana Mountains And Foothills

28	0300PST 2000PST				0	0			High Wind (G80)
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Strong surface high pressure over the western United States forced Santa Ana winds through and below passes and canyons. In Riverside County, a dozen power poles snapped like toothpicks near Corona cutting power to dozens of rural customers. In Riverside, a tree crushed a parked vehicle, and damaged a home. In Mira Loma, 12 power poles blew down, cutting power to hundreds, and forced the closure of Hamner Avenue for two days. In addition, heavy blowing dust and debris restricted visibility, creating hazardous driving conditions on the I-15.

## CALIFORNIA, Upper

NONE REPORTED.

## CALIFORNIA, West South Central

CAZ034>035-039>041

### San Luis Obispo County Central Coast - Santa Barbara County Central Coast - Santa Barbara County South Coast - Ventura County Coast - Los Angeles County Coasts Including Downtown Los Angeles

04	0100PST				0	0			Heavy Surf
07	0200PST								

A strong Pacific storm generated heavy surf along the Central and Southern California coasts. Widespread 6 to 8 foot surf was reported with local sets up to 12 feet.

CAZ034>041-044>047-051>054-059

### San Luis Obispo County Central Coast - Santa Barbara County Central Coast - Santa Ynez Valley - San Luis Obispo County Interior Valleys - Cuyama Valley - Santa Barbara County South Coast - Ventura County Coast - Los Angeles County Coasts Including Downtown Los Angeles - Ventura County Interior Valleys - Ventura County Coastal Valleys - Santa Monica Mountains Recreation Area - Los Angeles County Valleys - San Luis Obispo County Mountains - Santa Barbara County Mountains - Ventura County Mountains - Los Angeles County Mountains Excluding The Santa Monica Range - Antelope Valley

05	0100PST				1	0			Rain/Snow
07	0100PST								

A powerful Pacific storm brought heavy rain, snow, and strong winds to Southern California. Rainfall totals ranged from 2 to 6 inches over the coast...up to 12 inches in the mountains. Mudslides closed parts of Highway 1, Highway 126, and Highway 150. At higher mountain elevations, 3 to 6 inches of snow fell. Interstate 5, near the Grapevine, was closed several hours due to snow. Strong winds gusting to 50 mph, combined with sub-freezing temperatures, led to the exposure death of a hiker in the Angeles National Forest. F40CA

CAZ039>041-044>047-052>054

### Santa Barbara County South Coast - Ventura County Coast - Los Angeles County Coasts Including Downtown Los Angeles - Ventura County Interior Valleys - Ventura County Coastal Valleys - Santa Monica Mountains Recreation Area - Los Angeles County Valleys - Santa Barbara County Mountains - Ventura County Mountains - Los Angeles County Mountains Excluding The Santa Monica Range

09	0800PST				0	0			High Wind (G63)
11	2200PST								

Strong north to northeast flow developed across Southern California. Average wind speeds of 30 to 50 mph with gusts up to 72

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property		

December 1997

## CALIFORNIA, West South Central

mph were reported. On Interstate 10, near Covina, the wind blew down a 60 foot tree onto the freeway. One minor accident occurred when a van ran into the tree. In Santa Clarita, the wind blew down a eucalyptus tree onto a car parked at the International House of Pancakes. Numerous power outages were reported across the Southland. On Santa Catalina Island, the strong northeast winds produced very rough seas in Avalon Harbour. Fifteen boats were destroyed.

### **CAZ039-052>054 Santa Barbara County South Coast - Santa Barbara County Mountains - Ventura County Mountains - Los Angeles County Mountains Excluding The Santa Monica Range**

21	1400PST	0	0	High Wind (G61)
22	1800PST			

Strong north to northeast winds developed across the mountains of Southern California. Wind speeds of 35 to 45 mph were reported with gusts up to 70 mph. Other than some minor power outages, no damages or injuries were reported.

## CALIFORNIA, Western

### **Santa Clara County**

San Jose	08	1435PST	0.2	100	0	0	20K	Tornado (F0)
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weak tornado damaged some trailers in a trailer park. Minor damage to a few trailers.

## COLORADO, Central and Northeast

### **COZ036 Southern Front Range Foothills/Clear Creek Basin**

02	0800MST	0	0	0	Heavy Snow
03	0800MST				

Conifer received 10 inches of new snowfall.

### **COZ038 Eastern Larimer And Northwestern Weld Counties**

03	0500MST	0	0	0	Fog
	0900MST				

Dense fog was blamed in part for at least 40 accidents in the Fort Collins and Loveland areas during the morning commute. Visibilities were reduced to less than 1/4 of a mile at times.

### **COZ034 Summit County/Mosquito Range/Indian Peaks**

08	1600MST	0	0	0	Heavy Snow
09	1600MST				

Heavy snow fell in portions of the northern mountains. Keystone and Winter Park picked up 12 inches and 11 inches of snow respectively.

### **COZ036-040>041-045>046 Southern Front Range Foothills/Clear Creek Basin - Denver Metropolitan Area - Eastern Douglas And Western Elbert Counties/Castle Rock And Vicinity - Eastern Adams And Eastern Arapahoe Counties - Eastern Elbert And Northern Lincoln Counties/Limon And Vicinity**

08	2100MST	0	0	0	Winter Storm
10	0700MST				

A persistent light to moderate snowfall combined with gusty northerly winds to produce extensive blowing and drifting snow. The hardest hit areas were south of Interstate 70, in and near Monument Ridge. Northerly winds 20 to 35 mph with stronger gusts to 45 mph caused near whiteout conditions. The strong winds stirred up 2 to 4 foot snowdrifts and dropped wind chill temperatures well below zero. Numerous accidents were reported. Sections of Interstates 25 and 70 were closed, along with several other roads and highways as travel, became impossible in the blowing snow. A handful of people were stranded during the snowstorm.

Snowfall totals included: 22 inches at Conifer, 16 inches 3 miles south of Elbert, 13 inches at Castle Rock, 12 inches at Parker, 10 inches at Strasburg, with 8 inches reported at Kiowa and in southeast Aurora.

### **COZ035>036-038>041-043>049 Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin - Eastern Larimer And Northwestern Weld Counties - Eastern Boulder County/Boulder And Vicinity - Denver Metropolitan Area - Eastern Douglas And Western Elbert Counties/Castle Rock And Vicinity - Southern Weld County/Greeley And Vicinity - Morgan County/Fort Morgan And Vicinity - Eastern Adams And Eastern Arapahoe Counties - Eastern Elbert And Northern Lincoln Counties/Limon And Vicinity - Southern Lincoln County - Logan County/Sterling And Vicinity - Washington County/Akron And Vicinity**

24	2000MST	0	0	0	Heavy Snow
25	1100MST				

A rare Christmas snowstorm blanketed much of northeastern Colorado. Snowfall in and near the Front Range Foothills and Monument Ridge ranged from 5 to 8 inches with accumulations of 3 to 5 inches across Logan, Sedgwick and Phillips Counties. Elsewhere accumulations generally ranged from 1 to 3 inches.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## COLORADO, Central and Northeast

**COZ034>036-038>041-046-048** **Summit County/Mosquito Range/Indian Peaks - Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin - Eastern Larimer And Northwestern Weld Counties - Eastern Boulder County/Boulder And Vicinity - Denver Metropolitan Area - Eastern Douglas And Western Elbert Counties/Castle Rock And Vicinity - Eastern Elbert And Northern Lincoln Counties/Limon And Vicinity - Logan County/Sterling And Vicinity**

27 0900MST 0 0 0 High Wind (G83)  
28 0200MST

High winds combined with fresh snow from previous days caused slick roads and near whiteout conditions as localized ground blizzards developed. One person was injured in Summit County when she drove off Interstate 70 in whiteout conditions. Strong winds blew snow across the runways at Centennial Airport which glazed over and formed areas of black ice. Two planes were damaged when they slid off the runway while landing. No injuries were reported. Numerous accidents were also reported on Interstates 25 and 70 as black ice formed under the same conditions. High winds were also attributed to a rollover accident along Highway 93 near the Rocky Flats Environmental Test Facility. Four people were injured in the accident.

High wind reports included: 95 mph (83 kts) 4 miles northwest of Fort Collins, 86 mph (75 kts) at Golden Gate Canyon, 80 mph (70 kts) at Loveland Ski Area, 74 mph (64 kts) at Livermore, 72 mph (63 kts) 8 miles west of Conifer, 70 mph (61 kts) at the NCAR facility, in the foothills southwest of Boulder, and at Jefferson County Airport, 68 mph (59 kts) 4 miles east of Haxtun and 58 mph (50 kts) at Limon.

**COZ040** **Denver Metropolitan Area**

28 1100MST 0 0 120K 0 High Wind (G51)  
1600MST

High winds gusting to 60 mph (51 kts) during the afternoon, and from previous days, caused an office building and showroom under construction in Golden to collapse. The largest wall was 180 feet long and 28 feet high.

**COZ036-040** **Southern Front Range Foothills/Clear Creek Basin - Denver Metropolitan Area**

29 1300MST 0 0 0 High Wind (G61)  
1700MST

Strong crosswinds gusting between 60 and 70 mph (61 kts) blew a U-Haul rental truck off the roadway in northern Jefferson County, near Coal Creek Canyon Road.

## COLORADO, East Central

**COZ090>091** **Yuma County - Kit Carson County**

24 1800MST 0 0 Heavy Snow  
25 0600MST

Snowfall of 6 to 8 inches gave a white Christmas.

## COLORADO, South Central and Southeast

**COZ061-064>066-068>070-074>075-077-080>081** **Eastern San Juan Mountains - Southern San Luis Valley - Northern Sangre De Cristo Mountains - Southern Sangre De Cristo Mountains - Western Fremont And Northern Custer Counties - Upper Arkansas River Valley/Salida And Vicinity - Wet Mountains - Upper Huerfano River Basin/Walsenburg And Vicinity - Upper Purgatoire River Basin/Trinidad And Vicinity - Eastern Las Animas County - Prowers County/Lamar And Vicinity - Baca County/Springfield And Vicinity**

02 0800MST 0 0 Heavy Snow  
03 1300MST

A weather disturbance moved northeast across northern New Mexico, bringing snow to the mountains, high valleys, and plains of south central and southeast Colorado starting the morning of the 2nd through the afternoon of the 3rd. Snow accumulations ranged from 4 to 6 inches across parts of the southeast plains, the Palmer Divide, and southern portions of the San Luis Valley. Snowfall reached 9 inches at Rye in the Wet Mountains, 17 inches at Cuchara in the Southern Sangre De Cristo Mountains, and 22 inches at Wolf Creek Ski Area in the Eastern San Juan Mountains. The rest of the southeast plains received 1 to 3 inches amounts, including much of the Colorado Springs and Pueblo areas.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## COLORADO, South Central and Southeast

**COZ060>061-065>068-070>081** La Garita Mountains - Eastern San Juan Mountains - Northern Sangre De Cristo Mountains - Southern Sangre De Cristo Mountains - Teller County/Rampart Range/Pikes Peak - Western Fremont And Northern Custer Counties - Wet Mountains - Southern El Paso County/Colorado Springs And Vicinity - Northern El Paso County/Monument Ridge - Pueblo And Eastern Fremont Counties/Pueblo And Vicinity - Upper Huerfano River Basin/Walsenburg And Vicinity - Upper Purgatoire River Basin/Trinidad And Vicinity - Crowley And Otero Counties/La Junta And Vicinity - Eastern Las Animas County - Kiowa County - Bent County/Las Animas And Vicinity - Prowers County/Lamar And Vicinity - Baca County/Springfield And Vicinity

08 1600MST 0 0 Heavy Snow  
10 2345MST

A moist Pacific weather system moved across the Rockies and into the central plains of the U.S. from the 8th through the 10th. Abundant moisture was wrapped around the system, and brought snow to the southwestern and south central mountains the afternoon of the 8th through the 10th...and to the southeastern plains the morning of the 9th through the 10th. Totals from a persistent band of snow ranged from 4 inches at the Pueblo Memorial Airport to 7 inches at Manzanola and Swink in Otero county. Fort Reynolds in Pueblo county reported 9 1/2 inches of accumulation by the afternoon of the 9th. Across Monument Ridge, north of Colorado Springs, storm totals ranged from 10 to 18 inches in the Monument and Black Forest region east into northeast El Paso county. Near blizzard conditions were experienced during the afternoon of the 10th in eastern El Paso county, forcing U.S. Highway 24 to close for a time. Other snowfall totals included around one foot at Beulah and 20 to 25 inches around Rye in Pueblo county in the Wet Mountains. Twenty two inches fell at Aspen Acres Campground in Custer county, and a remarkable 44 inches at Cuchara at 9,000 feet in the Southern Sangre De Cristo Mountains.

**COZ077-079>081** Eastern Las Animas County - Bent County/Las Animas And Vicinity - Prowers County/Lamar And Vicinity - Baca County/Springfield And Vicinity

23 0300MST 0 0 Heavy Snow  
1300MST

A surface low pressure system moved across New Mexico into the Texas panhandle, setting down a band of heavy snow in extreme southeast Colorado. Snowfall accumulations ranged from 4 to 8 inches from the Lamar area in northern Prowers county, throughout Baca county, including Springfield and Walsh, and eastern Las Animas county, including Kim. One to three inches amounts were common in Kiowa, Bent, Crowley, Otero, and western Las Animas counties.

**COZ065>066-070-073>075-077** Northern Sangre De Cristo Mountains - Southern Sangre De Cristo Mountains - Wet Mountains - Pueblo And Eastern Fremont Counties/Pueblo And Vicinity - Upper Huerfano River Basin/Walsenburg And Vicinity - Upper Purgatoire River Basin/Trinidad And Vicinity - Eastern Las Animas County

24 0600MST 1 0 Heavy Snow  
25 1000MST

An upper level low pressure system combined with upslope northerly winds at the surface to produce widespread snow across the southeast mountains and adjoining plains starting the morning of the 24th and lasting into Christmas morning. Storm totals ranged from 4 to 9 inches in and around the Wet Mountains. However, 12 inches of snow fell in Cuchara in the Southern Sangre De Cristo Mountains and in Walsenburg in Huerfano county. One to three inches of snow fell on Monument Ridge, north of Colorado Springs, and in parts of the adjacent plains in southeast Colorado. One fatality was attributed to this storm. James Hall, 83, of Wetmore in Custer county, was found Christmas Eve after apparently falling outside of his home and dying of exposure. M83OU

## COLORADO, West

**COZ004-010>012-014-018>019-023** Elkhead And Park Mountains/Flat Tops/White River Plateau - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - Central Gunnison And Uncompahgre River Basin/Montrose And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Upper Gunnison River Valley/Gunnison And Vicinity - Northwestern San Juan Mountains - Southwestern San Juan Mountains - San Juan River Basin/Pagosa Springs And Vicinity

02 0000MST 0 0 Heavy Snow  
03 1000MST

An upper low tracked slowly eastward across western Colorado and produced 6 to 10 inches of snow in most mountain areas and 4 to 6 inches in some southern valleys. The heaviest reported amount was 15 inches at Telluride,

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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December 1997

## COLORADO, West

**COZ009-012-014-017>023** **Grand And Battlement Mesas - West Elk And Sawatch Mountains/Taylor Park - Upper Gunnison River Valley/Gunnison And Vicinity - Uncompahgre Plateau - Northwestern San Juan Mountains - Southwestern San Juan Mountains - Paradox Valley/Lower Dolores River - Four Corners/Upper Dolores River/Cortez And Vicinity - Animas River Basin/Durango And Vicinity - San Juan River Basin/Pagosa Springs And Vicinity**

07	0300MST	0	0	Heavy Snow
08	1100MST			

A moist west to southwest flow produced 6 to 12 inches of snow in the central and southern mountains as well as 4 to 8 inches in most southern valleys of western Colorado. The heaviest reported amount was 13 inches on the Grand Mesa.

**COZ002-004-009>010-012-018>019** **Central Yampa River Basin/Craig-Hayden And Vicinity - Elkhead And Park Mountains/Flat Tops/White River Plateau - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Northwestern San Juan Mountains - Southwestern San Juan Mountains**

08	1600MST	0	0	Heavy Snow
09	1600MST			

A Pacific trough moved across the area and produced 6 to 12 inches of snow in most western mountains as well as 4 to 7 inches in some northwest valleys. The heaviest reported amount was 13 inches at the Steamboat Springs Ski Area.

**COZ003>004-009>010-012** **Roan And Tavaputs Plateaus - Elkhead And Park Mountains/Flat Tops/White River Plateau - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park**

09	1800MST	0	0	Heavy Snow
10	0800MST			

A moist northerly flow produced 5 to 10 inches of new snow in the northern and central mountains of western Colorado. Some heavier amounts included 12 inches at the Steamboat springs Ski Area and 11 inches on the Grand Mesa.

**COZ021>022** **Four Corners/Upper Dolores River/Cortez And Vicinity - Animas River Basin/Durango And Vicinity**

24	2100MST	0	0	Heavy Snow
25	1000MST			

An upper low over Arizona brushed the southwest corner of Colorado with 4 to 9 inches of new snow.

## CONNECTICUT, Northeast

**CTZ002>004** **Hartford - Tolland - Windham**

02	0200EST	0	0	Strong Winds
	2200EST			

A strong storm system that was nearly stationary just to the east of Nova Scotia combined with high pressure building in from the west to cause strong northwest winds across northern Connecticut. Wind gusts to 30 to 40 mph were reported.

**CTZ002>003** **Hartford - Tolland**

10	1500EST	0	0	Heavy Snow
	2300EST			

A secondary low pressure system moving northeastward into the Atlantic Ocean from the mid-Atlantic coast caused an area of snow to spread across the state. Several inches fell across much of the state and heavy snowfall was reported from Hartford and Tolland Counties. Seven inches fell in the Unionville section of Farmington, with 6 inches in Glastonbury and Southington. There were no reports of any particular problems with this storm.

**CTZ002>004** **Hartford - Tolland - Windham**

14	1100EST	0	0	Strong Winds
	1700EST			

Strong northwest winds accompanied the arrival of an Arctic airmass. Wind gusts to 40 to 50 mph were reported across northern Connecticut. A peak gust to 47 mph was recorded at Bradley International Airport in Windsor Locks.

**CTZ003>004** **Tolland - Windham**

23	0900EST	0	0	Heavy Snow
	1500EST			

A low pressure system developing off the Delaware coast moved to the northeast and rapidly intensified as it passed just southeast of Cape Cod. This storm brought a surprise snowfall to northern Connecticut. Two people died in plowing accidents. In South Windsor, a woman was struck and killed by a plow in a parking lot. In Enfield, a man was killed while operating a snowplow on a tractor after being struck by a pickup truck. Several places in northern Tolland and Windham Counties had over 6 inches, while most of Hartford, Tolland, and Windham Counties had 2 to 5 inches of snow. The maximum totals reported included: Union, 7.0 inches and West Thompson, 6.2 inches.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage		

December 1997

## CONNECTICUT, Northwest

### CTZ001

#### Litchfield

10 1200EST  
11 0800EST

0 0

Winter Storm

During the early afternoon of December 10, moderate to heavy snow began across Litchfield County. The snow moved in quickly from the south and fell at a heavy rate shortly after onset. The timing and rate of snowfall caused many traffic problems during the evening commute. A general snowfall of 5 to 8 inches occurred across Litchfield County. Some specific snowfall totals included: 7 inches at Norfolk, 7 inches at New Preston and 7 inches at West Cornwall.

### CTZ001

#### Litchfield

24 2200EST  
25 0800EST

0 0

Freezing Rain

Late Christmas Eve and early Christmas morning, light freezing rain fell across Litchfield County. Initially the freezing rain was mixed with sleet. The light coating of freezing rain produced hazardous driving conditions especially during the early morning hours. Due to the light traffic flow only scattered accidents occurred. By mid morning the light freezing rain ended as temperatures rose into the middle and upper 30s.

## CONNECTICUT, Southern

### CTZ009

#### Southern Fairfield

10 1330EST  
11 0730EST

1 0

Snow

With cold air in place, a low pressure system developed off the Mid-Atlantic Coast during the late afternoon and evening. The low intensified as it moved east-northeast away from the area overnight.

The heaviest snow, which fell from 3 pm to 9 pm on December 10th, made driving and walking hazardous.

A man was struck by a car that went out-of-control near the edge of his driveway while it was snowing heavily in Norwalk. At Bridgeport, 5 inches of snow fell. Wet snow also accumulated on trees, which caused some tree limbs to fall on power lines.

M40OT

### CTZ006-009>010-010-012

#### Northern New Haven - Southern Fairfield - Southern New Haven - Southern New London

29 2330EST  
30 1110EST

0 0

High Wind (G59)

A low pressure system developed off the Carolina Coast Monday morning, December 29th, while a high pressure system was northeast of the area. As the low moved north along the coast, it rapidly intensified. The low moved over New York City (Brooklyn) during the evening preceded by high winds and heavy rain.

East to northeast winds increased rapidly by evening. The highest winds occurred from 9 pm December 29th to 12:30 am December 30th. Wind speeds were sustained from 30 to 40 mph. Wind gusts were measured by a spotter in Guilford at 59 knots. Damage to trees and power lines were reported in Waterford (Southern New London County), Ansonia and Naugatuck (Northern New Haven County) and Stamford (Southern Fairfield County).

High winds also developed on the back side of this system as it passed the area on Tuesday December 30th. A wind gust to 52 knots occurred in Guilford.

## DELAWARE

### DEZ004

#### Delaware Beaches

29 1800EST  
2300EST

0 0

0 Coastal Flooding

A low pressure system formed to the lee of the Southern Rockies the morning of December 28th and moved east into the Tennessee Valley the morning of the 29th. A second low pressure system formed along the South Carolina Coast the morning of the 29th and intensified rapidly as it moved northward and became the main low pressure system. The low moved inland along the New Jersey shore the night of the 29th. By 7 a.m. EST on the 30th it was located in southern Vermont.

The strong onshore flow preceding the low pressure system caused some minor tidal flooding at the times of the evening high tide on the 29th. The heaviest rain in most places did not coincide with the incoming tide and thus did not exacerbate the flooding along the coastal communities. The high tides that evening included 6.1 feet above mean low water in Lewes. Tidal departures averaged between 2.0 and 2.5 feet above normal.



# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## DISTRICT OF COLUMBIA

NONE REPORTED.

## FLORIDA, East Central

### **Osceola County**

5 S Kissimmee	13	1000EST			0	0	60K		Flash Flood
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Heavy rains of 6 to 11 inches in northern Osceola County flooded 30 roads and 2 homes near Kissimmee, St. Cloud and Poinciana.

### **Osceola County**

5 SW St Cloud	27	0445EST	0.4	80	0	0	1.5M		Tornado (F1)
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A weak F1 tornado moving northeast over Lake Tohopekaliga touched down in the Kissimmee Park community southwest of St. Cloud. The tornado destroyed 4 mobile homes and damaged 10 other structures.

### **Osceola County**

St Cloud	27	1200EST 1600EST			0	0	400K		Flash Flood
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Heavy rains that followed a month of wet weather produced flash flooding in a mobile home park in St. Cloud. Seventeen mobile homes were flooded.

## FLORIDA, Northeastern

### **Duval County**

Jacksonville	10	0550EST			0	0			Thunderstorm Wind (G54)
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### **Duval County**

8.5 NW Jacksonville to 8 N Jacksonville	10	0600EST	0.5	15	0	0	15K		Tornado (F0)
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Barn roof destroyed. Large trees and power lines were blown down.

### **Columbia County**

4 NE Lake City to 8 NE Lake City	10	0720EST 0728EST	8	10	0	0	5K		Tornado (F0)
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Large trees and power lines were blown down.

### **Baker County**

10 NNW Sanderson to 10.2 NNW Sanderson	10	0728EST	0.2	10	0	0	1.5K		Tornado (F0)
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Large trees and power lines were blown down.

**FLZ024>025-033-033-038**

### **Nassau - Duval - St. Johns - Flagler**

	15	0700EST 2300EST			0	1	175K		Winter Storm
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A strong Low pressure system whipped up seas of 10 to 12 feet, causing moderate beach erosion. The storm damaged the Flagler Beach Pier. An employee, 36, male, of a firm rebuilding the pier was tossed into the water and floated to shore about 10 blocks South of the pier. He was treated for hypothermia.

### **Clay County**

Countywide	15	1330EST 1830EST			0	0	5K		Flood
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### **Duval County**

Countywide	15	1330EST 1830EST			0	0	20K		Flood
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### **Flagler County**

Countywide	15	1330EST 1830EST			0	0	10K		Flood
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### **Nassau County**

Countywide	15	1330EST 1830EST			0	0	5K		Flood
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### **Putnam County**

Countywide	15	1330EST 1830EST			0	0	10K		Flood
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# Storm Data and Unusual Weather Phenomena

December 1997										
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
FLORIDA, Northeastern										
St. Johns County										
Countywide	15	1330EST 1830EST			0	0	10K			Flood
Heavy rains produced widespread flooding and ponding of water across Northeast Florida. Amounts ranged from 3 to 7.5 inches. Numerous streets and roads were closed with water 20 feet deep in some spots.										
Flagler County										
1 E Flagler Beach to 1.2 ENE Flagler Beach	15	1720EST			0	0				Waterspout
FLORIDA, Northwest										
NONE REPORTED.										
FLORIDA, Southern										
Dade County										
Homestead Afb	27	1647EST			0	0				Thunderstorm Wind (G61)
FLZ069 Coastal Collier										
	30	0100EST 0200EST			0	0				Flood
collier county emergency manager reported gulf of mexico water over the vanderbelt beach parking lot. west to northwest winds 47 mph. parking lot										
FLORIDA, West Central										
Lee County										
Cape Coral	04	0920EST			0	0	35K	0		Lightning
Lightning struck and burned to the ground a home on the 1400 block of Vincennes Court in Cape Coral. The lightning struck near the kitchen and spread the fire through the remainder of the home.										
Manatee County										
27 E Bradenton to Bradenton	05 06	0800EST 0800EST			0	0	0	100K		River Flood
The Manatee River at Myakka Head along State Road 64 crested at 7.4 feet on the 5th, nearly a half foot above the flood stage of seven feet. Several tomato fields were flooded by crest.										
Sarasota County										
27 E Sarasota	05 09	0800EST 0800EST			0	0	0	0		River Flood
The Myakka River at Myakka State Park crested at 7.2 feet on the 6th, a few inches above the flood stage of seven feet.										
Hillsborough County										
21 NE Tampa	10 18	0800EST 0800EST			0	0	100K	0		River Flood
The Hillsborough River at Hillsborough State Park crested at 13.5 feet, 3.5 feet above the flood stage of ten feet on the 14th. Several homes in a mobile home park, along State Road 579 near U.S. Highway 301, received minor to moderate damage.										
Citrus County										
Floral City to Citrus Spgs	11	0500EST 1000EST			0	0	0	0		Dense Fog
Dense fog that reduced visibility to less than a quarter mile occurred along the shores of Lake Hernando and along the U.S. Highway 41 corridor.										
Pasco County										
18 W Zephyrhills	12 31	0800EST 2359EST			0	0	10K	0		River Flood
The Cypress Creek at Worthington Gardens along State Road 54 crested at 10.9 feet, nearly three feet above the flood stage of eight feet on the 17th. Minor flooding and water damage occurred at a fish and trailer camp along State Road 54.										
Hillsborough County										
13 NE Tampa	13 19	0800EST 0800EST			0	0	800K	0		River Flood
The Hillsborough River in Hillsborough county crested at 34.3 feet at Morris Bridge Road on the 14th and caused damage to 30 to 40 homes and apartments along its banks between Fletcher and Fowler Roads.										

# Storm Data and Unusual Weather Phenomena

December 1997

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
Killed	Injured									

## **FLORIDA, West Central**

### **Hillsborough County**

13 SE Tampa	13	0800EST			0	0	1.1M	0	River Flood
	17	0800EST							

In Hillsborough county, heavy rains caused flood damage to 52 rental homes along and near the Alafia River in Riverview, which crested at 17.0 feet on the 14th.

### **Hillsborough County**

21 SSE Tampa	13	0800EST			0	0	100K	0	River Flood
	17	0800EST							

In Hillsborough county, heavy rains cause the Little Manatee River to crest at 16.0 feet, five feet above the flood stage of eleven feet, at U.S. Highway 301. Several homes along 32nd to 33rd streets in Ruskin were damaged by floodwaters.

### **Manatee County**

27 E Bradenton	13	0800EST			0	0	50K	400K	River Flood
	17	0800EST							

The Manatee River at Myakka Head along State Road 64 crested at 15.6 feet on the 14th, over eight and a half feet above the flood stage of seven feet. A few homes in the flood plain and along the banks of the Manatee River received flood damage.

### **De Soto County**

8 W Arcadia	13	0800EST			0	0	10K	0	River Flood
	20	0800EST							

The Horse Creek crested at 14.4 feet, near two and a half feet above the flood stage of twelve feet, on the 16th. A few homes in the Hidden acres subdivision received minor flood damage.

### **Sarasota County**

25 SE Sarasota	13	0800EST			0	0	20K	0	River Flood
	31	2359EST							

The Myakka River at Myakka State Park crested at 9.4 feet on the 16th, nearly two and a half feet above the flood stage of seven feet. Road flooding from the crest of the Myakka River occurred along Brentwood Drive and Dixon Roads.

### **Hardee County**

Wauchula to Gardner	13	1300EST			0	0	250K	0	Flood
		2330EST							

### **Pinellas County**

Countywide	13	1300EST			0	0	500K	0	Flood
		2330EST							

### **Polk County**

Lakeland to Auburndale	13	1300EST			0	0	750K	0	Flood
		2330EST							

### **Sarasota County**

Sarasota	13	1300EST			0	0	80K	0	Flood
		2330EST							

Heavy rains caused flooding to homes along and near the Peace River along U.S. Highway 17 near the Hardee-De Soto county line. The Horse Creek in Hardee county also overflowed it's banks and caused minor to moderate water damage to homes and businesses. Damage in Hardee county from the flooding was estimated at \$250,000.

In Pinellas county, heavy rainfall caused flooding in two mobile home parks in Largo. The heavy rainfall seriously damaged road infrastructure along Curlew Road from County Road 1 to Belcher Road. Flooding of homes and roads also occurred in the Tarpon Woods area along Brooker Creek in Pinellas county. Damage in Pinellas county from the flood was estimated at \$500,000.

In Polk county, five to seven inches of rain fell from Lakeland south to Bartow and east to Auburndale and caused extensive road and infrastructure damage. Most of the damage occurred in the Green Swamp, along Spirit Lake Road, Misty Lake Road, Thornhill Road and Red Hawk Drive where eight to ten homes were flooded with six to twelve inches of water with isolated pockets up to four feet deep. Damage from the flood in Polk county was estimated at \$750,000.

In Sarasota county, six to eight inches of rain in less than twelve hours caused road and home flooding along Lockwood Ridge Road near Bahia Vista Street in Sarasota. Damage from the flood in Sarasota county was estimated \$80,000.

### **Hillsborough County**

Countywide	13	1300EST			0	0	1.5M	0	Flood
	14	1430EST							

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## FLORIDA, West Central

### Manatee County

Countywide	13	1300EST			0	0	50K	0	Flood
	14	1430EST							

### Pasco County

Countywide	13	1300EST			0	0	3.0M	500K	Flood
	14	1430EST							

Heavy rains caused flooding of 70 to 80 homes along a one mile strip of the Anclote River near Elfers in Pasco county where eight to nine inches of rain with isolated amounts of up to 14 inches fell in less than twelve hours.

Floodwaters caused nearly one million dollars worth of damage to mechanical equipment at the Stearns Peat Company along U.S. Highway 98 near Dade City in eastern Pasco County.

An estimated half million dollars worth of crops, mainly strawberry, were damaged throughout portions of eastern Pasco county by the heavy rains. Property damage from in Pasco county from the flood was estimated at \$2.95 million dollars.

In Hillsborough county, eight homes in north Tampa lost electrical power due to the floodwaters caused by heavy rain of up to seven inches in less than twelve hours. Also, several properties along an area from Nebraska Avenue and 22nd Street east to the University of South Florida along Fowler Avenue incurred water damage from the floodwaters. These included twenty-two homes, 91 apartments and two mobile homes damaged by the floodwaters along low lying or areas near the Hillsborough River. Damage in Hillsborough county from the flood was estimated at \$1.5 million dollars.

In Manatee county, several mobile homes were flooded at the Frog Creek Campground in Rubonia. Damage in Manatee county from the flood was estimated at \$50,000 dollars.

### Hardee County

1 N Zolfo Spgs	14	0800EST			0	0	0	0	River Flood
	17	0800EST							

The Peace River along U.S. Highway 17 in Zolfo Springs crested at 16.8 feet, near a foot above the flood stage of 16 feet, on the 15th.

### De Soto County

1 W Arcadia	14	0800EST			0	0	30K	0	River Flood
	24	0800EST							

The Peace River along State Road 70 in Arcadia crested at 14.7 feet, nearly three and a half feet above the flood stage of eleven feet, on the 18th. Six homes along the banks of the Peace River received minor flood damage.

### Polk County

1 E Bartow	15	0800EST			0	0	0	0	River Flood
	31	2359EST							

The Peace River along State Road 60 in Bartow crested at 8.5, one half foot above the flood stage of eight feet, on the 31st.

### Pasco County

Trilby	15	0800EST			0	0	1.1M	0	River Flood
	31	2359EST							

The Withlacoochee River rose to 15.8 feet on the 31st, which caused 29 homes and 60 properties along the river to flood. Flood stage for the Withlacoochee River at Trilby was 12 feet. Eight homes from Trilby to Lacoochee were destroyed and 20 more damaged by floodwaters.

### Hernando County

11 E Brooksville	18	0800EST			0	0	1.5M	0	River Flood
	31	2359EST							

The Withlacoochee River at Croom crested at 10.9 feet, nearly two feet above the flood stage of nine feet on the 31st. Several homes along Hernando-Pasco county line, from Croom south to Ridge Manor, were damaged by floodwaters. The most heavily damaged areas were near County Road 575 and U.S. Highway 301 at the Talisman Estates along the eastern Pasco-Hernando county line. Fifty-four homes were damaged by floodwaters of which ten were destroyed and another 27 incurred major damage.

### Pasco County

Dade City	21	0800EST			0	0	200K	0	River Flood
	31	2100EST							

The Withlacoochee River in Dade City crested at 16 feet, four feet above flood stage and flooded several homes including the Withlacoochee RV park and Canoe Rental.

### De Soto County

Arcadia	24	0800EST			0	0	50K	0	River Flood
	26	1200EST							

The Peace River in Arcadia crested at 13.0 feet, two feet above flood stage, and flooded a few homes in Arcadia.

# Storm Data and Unusual Weather Phenomena

December 1997									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
FLORIDA, West Central									
Pinellas County									
Largo	27	0300EST 0400EST			0	0	400K	0	Urban/Sml Stream Fld
Twenty homes in the Mariner's Cove Mobile Home Park in Largo were flooded with water up to four feet deep from heavy rains.									
Polk County									
7.5 NE Bartow to 8.5 NE Bartow	27	0356EST 0358EST	1	30	0	0	200K	0	Tornado (F0)
A tornado touched down in the Oakwood Estates mobile home park along Spirit Lake Road south of County Road 540. Approximately twelve mobile homes sustained minor to moderate roof, lanai and siding damage.									
Polk County									
4.5 SW Haines City to 1.3 NE Haines City	27	0408EST 0417EST	5.8	150	0	18	6M	0	Tornado (F2)
A strong F2 tornado touched down in the Lake Region mobile home park along U.S. Highway 27 and County Road 544 in Polk county. Several mobile homes sustained major to severe damage. Residents of Haines City who heard the tornado described that the sound resembled a high-pitched whine.									
The F2 tornado moved northeast and travelled across U.S. Highway 27 and caused significant wall and roof damage to several well built wood, mixed brick and mobile homes over mainly south and east Haines City from County Road 544 northeast to County Road 580. The Boone Middle School over eastern Haines City had heavy damage to a main building while eleven portable classrooms were destroyed or heavily damaged.									
Numerous trees were uprooted or snapped half way up from the base. Several orange trees were sheared near the base along County Road 544. Several power poles were snapped and power lines downed along the path of the F2 tornado.									
Total damage was estimated at six million dollars. Seventy-five homes were destroyed, another 75-100 suffered major damage while another 75-100 received minor damage. Most of the homes destroyed were mobile or pre-fabricated homes. Also, at least ten vehicles were damaged or destroyed by the tornado.									
Nearly 2,000 electrical customers were without power from power poles and lines blown down by the tornadic wind.									
Most injuries that occurred during the tornado touchdown resulted from wind blown debris.									
Polk County									
Lakeland to Socrum	27	0430EST 1500EST			0	0	0	0	Urban/Sml Stream Fld
Three to five inches of heavy rain caused flooding and closure of up to eleven roads in northern Polk county.									
Hillsborough County									
Plant City	27	0700EST			0	0	4K	0	Thunderstorm Wind
Thunderstorm winds downed a few trees and several large branches along U.S. Highway 92 in Plant City.									
Manatee County									
Bradenton	27	0705EST			0	0	10K	0	Thunderstorm Wind
Thunderstorm winds caused minor siding and lanai damage to a few mobile homes in Bradenton.									
Polk County									
Lakeland	27	0710EST			0	0	20K	0	Thunderstorm Wind
Thunderstorm winds caused minor shingle and roof damage to a few homes in Lakeland. A few large trees and several power lines were downed near U.S. Highway 92 and State Road 37 in Lakeland.									
Hillsborough County									
21 NE Tampa	27 31	0800EST 0800EST			0	0	250K	0	River Flood
The Hillsborough River at Hillsborough State Park crested at 14.2 feet, over four feet above the flood stage of ten feet, on the 28th. Several mobile homes were flooded near U.S. Highway 301 and County Road 579.									
Manatee County									
27 E Bradenton	27 30	0800EST 0800EST			0	0	0	500K	River Flood
The Manatee River at Myakka Head along State Road 64 crested at 13.8 feet on the 28th, over six and a half feet above the flood stage of seven feet. Significant crop damage occurred, mainly tomatoes, from the floodwaters.									

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		December 1997
					Killed	Injured	Property	Crops	

## FLORIDA, West Central

### **Hillsborough County**

18 ESE Tampa	27	0800EST			0	0	600K	0	River Flood
	31	0800EST							

The Alafia River along State Road 640 in Lithia crested at 17.5 feet, nearly four and a half feet above the flood stage of 13 feet, on the 28th. Sixty mobile homes and rental properties were damaged for a second time in a month along the Alafia River.

### **Hillsborough County**

21 SSE Tampa	27	0800EST			0	0	40K	0	River Flood
	31	0800EST							

In Hillsborough county, heavy rains caused the Little Manatee River to crest at 14.7 feet, over three and a half feet above the eleven foot flood stage at U.S. Highway 301, on the 28th. A few homes were damaged by floodwaters in Ruskin.

### **De Soto County**

1 W Arcadia	28	0800EST			0	0	10K	0	River Flood
	31	2359EST							

The Peace River along State Road 70 in Arcadia crested at 11.8 feet, nearly a foot above the flood stage of eleven feet, on the 31st.

### **Hillsborough County**

13 NE Tampa	28	0800EST			0	0	150K	0	River Flood
	31	0800EST							

The Hillsborough River in Hillsborough county crested at 34.0 feet at Morris Bridge Road, nearly two feet above the flood stage of 32 feet, on the 29th. Nearly 30 homes incurred minor damage from floodwaters.

### **De Soto County**

Arcadia	29	0825EST			0	0	3K	0	Thunderstorm Wind
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Thunderstorm winds downed several large branches and a few power lines along State Road 70 in Arcadia.

## FLORIDA, West Panhandle

NONE REPORTED.

## GEORGIA, East Central

### **Columbia County**

2 NW Martinez	24	1430EST			0	0	10K	0	Flash Flood
		1800EST							

Flash flooding along several creeks flooded several highways. G.R. Tucker road was washed out.

### **Richmond County**

Augusta	24	1445EST			0	0	2K	0	Flash Flood
		1800EST							

Flash flooding along several creeks flooded several highways including Richmond Hill road.

## GEORGIA, Lower

NONE REPORTED.

## GEORGIA, North and Central

**GAZ073-080-082-094-096>097-106>112**     **Baldwin - Taylor - Bibb - Peach - Bleckley - Laurens - Crisp - Pulaski - Wilcox - Dodge - Telfair - Wheeler - Montgomery**

24	1400EST			0	0	200K	Flood
28	1400EST						

Rainfall amounts of 3 to 4 inches on the 24th fell on already saturated ground in central Georgia. Other showers fell over the area into the 26th. Street flooding was common with some roads damaged and others closed. Runoff caused flooding along the Flint, Ocmulgee, and Oconee rivers in central Georgia. Residents along rivers evacuated their homes in some areas as flood waters threatened. The rivers rose to their highest levels since the 1994 flood, although they were still approximately 10 feet lower than that event. Rivers continued above flood stage for several more days after the rains had ended. Monthly rainfall amounts totaled 8 to 10 inches across much of central Georgia.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage		

December 1997

## GEORGIA, North and Central

### **GAZ006>009-016 Fannin - Gilmer - Union - Towns - White**

29 0600EST 0 0 Heavy Snow  
1500EST

A winter storm system moved across Tennessee and another area of low pressure developed off the South Carolina coast. This produced snowfall amounts across north central and parts of northeast Georgia of 3 to 4 inches. Amounts up to 5 inches may have fallen in a few of the higher elevations. Roads became snow covered and dangerous for travel. Counties in northwest Georgia received 2 to 3 inches, but no significant travel problems were noted. Lighter amounts of 1 to 2 inches fell in other sections of north Georgia, as far south as a line from Newnan to Athens. Most of the lighter amounts only accumulated on grassy areas and a few roads, and melted quickly during the day.

## GEORGIA, Northeast

### **GAZ010-017 Rabun - Habersham**

08 1100EST 0 0 Wintry Mix  
09 0400EST

A mix of snow and sleet became mostly sleet and freezing rain during the day, then ended during the early morning of the 9th. A thin coating of ice covered many roads as well as trees and power lines. Roads were very slick during the evening.

### **GAZ010 Rabun**

27 0000EST 0 0 Snow  
1500EST

Light snow accumulated to between 1 and 2 inches across Rabun county.

### **GAZ010-017 Rabun - Habersham**

29 0530EST 0 0 Snow  
1500EST

A strong storm system moved northeast across the Carolinas and brought some snow to the mountains of northeast Georgia. Accumulations ranged between 1 and 2 inches.

### **GAZ010-017>018-026 Rabun - Habersham - Stephens - Franklin**

30 1700EST 0 0 Snow  
2300EST

An upper level disturbance in a strong northwest flow, in the wake of the previous day's storm system, brought 2-3 inches of snow to the Georgia mountains and 1/2 to 2 inches farther south.

## GEORGIA, Southeast

NONE REPORTED.

## GEORGIA, Southwest

NONE REPORTED.

## GEORGIA, West Central

NONE REPORTED.

## HAWAII

### **HIZ001>002**

#### **Kauai - Oahu**

02 1400HST 0 0 High Surf  
04 0500HST

Low far northwest of the Hawaiian Islands produced surf of 8 to 12 feet along the north shores of Oahu and Kauai.

### **HIZ001>002**

#### **Kauai - Oahu**

03 2000HST 0 0 High Surf  
05 0500HST

Strong trade winds affecting the Hawaiian Islands caused surf of 6 to 8 feet along northeast and east facing shores of these two isles.

### **Honolulu County**

#### **Makakilo City**

09 1730HST 0 0 Funnel Cloud  
1745HST

Funnel cloud was visible for about 10 to 15 minutes over this Leeward Oahu community.

### **HIZ004**

#### **Island Of Hawaii**

10 0400HST 0 0 High Wind (G61)  
12 0800HST



# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage Crops	Character of Storm
December 1997									
<b><u>HAWAII</u></b>									
			West winds of 50 to 70 mph persisted near the summits of Mauna Kea and Mauna Loa as an upper air trough moved eastward over the islands.						
<b>HIZ001&gt;006</b>			<b>Kauai - Oahu - Maui - Island Of Hawaii - Molokai - Lanai</b>						
		11 1000HST			0	0			High Surf
		13 1600HST							
		Strong low far northwest of the Hawaiian Islands generated surf of 10 to 15 feet along the north shores and 6 to 10 feet along west facing shores of all the islands.							
<b>HIZ001&gt;006</b>			<b>Kauai - Oahu - Maui - Island Of Hawaii - Molokai - Lanai</b>						
		21 1400HST			1	2			High Surf
		23 1400HST							
		Deep storm low that moved from near the dateline far northwest of the Hawaiian Islands to the Gulf of Alaska produced surf of 10 to 15 feet on north facing shores and 12 to 18 feet on west shores of all the islands. The rough surf claimed the life of a 46-year old woman and injured her 40-year old female cousin in waters near Kokee Beach on the north shore of Maui. This occurred at about 3:30 P.M. on the 22nd. The women were caught in a strong undertow and swept out into the pounding surf. The woman who survived was totally exhausted and barely able to stay afloat when rescuers arrived on the scene. They were unable to resuscitate the other victim. A male in his early 20s, one of 18 surfers to be rescued by water safety officials on the 22nd in Oahu, was injured in Makaha on the west shore of that isle in the early afternoon when he was driven into his surf board and suffered a cut underneath his eye and minor neck injuries. F461W							
<b>HIZ001&gt;002</b>			<b>Kauai - Oahu</b>						
		30 0500HST			0	0			High Surf
		1400HST							
		A strong low far northwest of the Hawaiian Islands that moved quickly northeast generated surf of 6 to 10 feet along the north facing shores of Oahu and Kauai.							
<b><u>IDAHO, Extreme Southeast</u></b>									
		NONE REPORTED.							
<b><u>IDAHO, North</u></b>									
		NONE REPORTED.							
<b><u>IDAHO, Northwest</u></b>									
		NONE REPORTED.							
<b><u>IDAHO, Southeast</u></b>									
		NONE REPORTED.							
<b><u>IDAHO, Southwest</u></b>									
<b>IDZ012-015-023</b>			<b>Lower Treasure Valley - Southwest Highlands - Caribou Highlands</b>						
		07 2100MST			0	0			Heavy Snow
		08 1800MST							
		A storm dumped 3 to 6 inches of snow across much of southern and central Idaho starting during the night of December 7th through the morning of December 9th. 3 to 4 inches fell in southwest Boise disrupting traffic and causing 25 minor auto accidents on area roads, with 6 inches reported in the foothills north of Boise. Heavy snow fell on higher elevations with 10 inches of snow reported at Silver City in the Owyhee Mountains. 8 inches of new snow was reported from the foothills near Pocatello.							
<b>IDZ001-003&gt;005-011-013</b>			<b>Northern Panhandle - Lewiston And The Palouse - Shoshone - Northern Clearwater Mountains - West Central Mountains - Boise Mountains/Camas Prairie</b>						
		15 0400MST			0	0			Heavy Snow
		18 0400MST							
		The central mountains and northern Idaho experienced heavy snow fall from the night of December 15th through December 17th. In the West Central Mountains 6 to 7 inches fell near Council, 6 inches at Bear and Midvale with 5 inches at Cascade. This heavy, wet snow downed power lines and trees in this region. 7 to 10 inches fell at higher elevations of the West Central Mountains, the Boise Mountains and Clearwater Mountains. In northern Idaho, 5 inches fell near Sandpoint and Deary. Over the course of 3 days ending on the morning of December 18th, Lookout Pass in Shoshone county reported 33 inches of new snow.							
<b>IDZ003</b>			<b>Lewiston And The Palouse</b>						
		20 2000MST			1	0			Heavy Snow
		During the night of December 20-21, one to 4 inches of snow fell across northern Idaho. One man died when his car slid off the road between St. Maries and Plummer.							
		M52VE							

# Storm Data and Unusual Weather Phenomena

December 1997										
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
IDAHO, Southwest										
IDZ022	South Central Highlands									
23	2000MST				0	0				Heavy Snow
24	0800MST									
During the night of December 23-24, 7 inches of new snow fell in the Oakley area of the South Central Highlands.										
IDZ003	Lewiston And The Palouse									
28	0600MST				0	0				Heavy Snow
	1300MST									
A storm dumped 5 inches of snow at Moscow and St. Maries.										
ILLINOIS, Central										
ILZ027>031-036>038-040>043-047>051	Knox - Stark - Peoria - Marshall - Woodford - Fulton - Tazewell - Mclean - Schuyler - Mason - Logan - De Witt - Cass - Menard - Scott - Morgan - Sangamon									
09	1500CST				1	0				Heavy Snow
10	0200CST									
A strong low pressure system moving northeast through Southern Illinois and into Central Indiana spread a band of heavy snow in about a 50 mile wide swath centered along the Illinois River. Most locations reported about 5 inches of snowfall with some locally heavier amounts around 6 inches. Numerous traffic accidents were reported but no serious injuries resulted. One exception resulted in a death in Peoria County. A tow truck driver was killed after a car skidded off a roadway and into a stranded car, pinning the victim. M51VE										
ILZ027>030-036-040	Knox - Stark - Peoria - Marshall - Fulton - Schuyler									
24	1200CST				0	0				Heavy Snow
	2100CST									
A winter storm system produced a band of heavy snow in areas mainly northwest of the Illinois River on Christmas Eve. Snow fall began around noon and ended by mid evening. Snow amounts ranged from 2 inches along the Illinois River with up to 5 inches across Knox County. Numerous traffic accidents were reported due to the slick roads but no serious injuries resulted.										
ILZ027-036-040>041-047>052-061-066-071	Knox - Fulton - Schuyler - Mason - Cass - Menard - Scott - Morgan - Sangamon - Christian - Shelby - Effingham - Clay									
30	0800CST				3	0				Heavy Snow
	1600CST									
About a 70 mile wide band of heavy snow, southwest of a Galesburg to Springfield to Effingham line, occurred. Snow amounts ranged from 3 to 6 inches with the heaviest occurring in a line from Rushville to south of Springfield. Numerous traffic accidents were reported resulting from slick roadways. 3 deaths were attributed to the slippery roads as they lost control of their vehicles. Otherwise no other serious injuries were reported. F57VE, M5VE, M68VE										
ILLINOIS, Northeast										
ILZ014-022>023-032	Cook - Will - Kankakee - Livingston									
09	1800CST				0	0				Heavy Snow
10	0600CST									
A band of heavy snow fell across portions of northeast Illinois during the evening of the 9th and ended the morning of the 10th. The heaviest amounts fell over northeast Livingston county, western Kankakee county, eastern Will county and extreme southern Cook county. Some snowfall amounts include: Dwight - 6 inches in Livingston county, Kankakee - 5 inches in Kankakee county, Monee Reservoir - 5.5 inches in Will county, and Olympia Fields - 6.1 inches in Cook county.										
ILLINOIS, Northwest										
ILZ015>018-024>026-034>035	Rock Island - Henry - Bureau - Putnam - Mercer - Henderson - Warren - Hancock - Mcdonough									
09	1700CST				0	0				Heavy Snow
10	0900CST									
A strong winter storm dumped heavy snow over portions of Southeast Iowa and West Central Illinois resulting in numerous school closures and minor accidents. Most locations received from 3 to 6 inches of snow with isolated heavier amounts up to 8 inches.										
ILZ001>002-007-009-015>017-024>026-034>035	Jo Daviess - Stephenson - Carroll - Whiteside - Rock Island - Henry - Bureau - Mercer - Henderson - Warren - Hancock - Mcdonough									
24	1100CST				0	0				Heavy Snow
	2130CST									
Snow and heavy snow blanketed much of East Central and Southeast Iowa, and West Central Illinois causing greatly reduced										

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## ILLINOIS, Northwest

visibilities, slick roads and numerous accidents. Most areas had snowfall amounts from 3 to 6 inches. However, a band of heavier snow produced amounts in the 6 to 8 inch range from southeastern Iowa into western Illinois. The heavy wet snow was also a contributing factor in the death of a Rock Island, IL man who suffered a heart attack while shoveling.

## ILLINOIS, South

**ILZ075>078-  
080>083**

**Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White**

<b>08</b>	<b>1200CST</b>	<b>0</b>	<b>0</b>	<b>Snow</b>
	<b>1700CST</b>			

Snow accumulated from 1 to 3 inches across parts of southern Illinois from around Du Quoin to Mt. Carmel, including the Mt. Vernon area. Specific accumulations included one inch at Du Quoin and 3 inches at Mt. Carmel.

**ILZ075>078-  
080>094**

**Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac**

<b>09</b>	<b>0500CST</b>	<b>0</b>	<b>0</b>	<b>Fog</b>
	<b>0900CST</b>			

Widespread dense fog caused hazardous travel conditions. Visibility was generally a quarter mile or less over the area.

**ILZ075>078-  
080>094**

**Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac**

<b>18</b>	<b>0530CST</b>	<b>0</b>	<b>0</b>	<b>Fog</b>
	<b>0900CST</b>			

Patchy dense fog reduced visibility to near zero in some spots. With temperatures in the mid 20s, a layer of frost formed, even on some roads. This resulted in slick spots for early morning commuters.

**ILZ075>078-  
080>083**

**Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White**

<b>30</b>	<b>1200CST</b>	<b>0</b>	<b>0</b>	<b>Snow</b>
	<b>1800CST</b>			

An "Alberta Clipper" type of low pressure system produced 2 to 4 inches of snow from the Mount Vernon and Duquoin areas east to the lower Wabash River. Specific snowfall amounts included 2.5 inches at Mount Vernon, 2 inches at West Frankfort, and 4 inches at Mount Carmel.

## ILLINOIS, Southwest

**ILZ095>097**

**Adams - Brown - Pike**

<b>09</b>	<b>1400CST</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
	<b>2000CST</b>			

Snowfall ranging from 3 to 6 inches fell from Central Missouri into West Central Illinois on 12/9/97. The heaviest band of snow extended from Montgomery and Pike counties in Missouri northeast into Adams and Pike counties in Illinois. Roads quickly became snowpacked as the heaviest snow fell quickly during the mid-afternoon hours.

**ILZ095>096**

**Adams - Brown**

<b>24</b>	<b>1000CST</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
	<b>1900CST</b>			

Snowfall of 3 to 6 inches fell across parts of West Central Illinois the day before Christmas, much to the delight of area children. Temperatures hovered around the freezing mark, thus most area roads remained in decent shape.

## INDIANA, Central

NONE REPORTED.

## INDIANA, Northeast

NONE REPORTED.

## INDIANA, Northwest

**INZ001>003**

**Lake - Porter - La Porte**

<b>09</b>	<b>2100EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>10</b>	<b>0800EST</b>			

A band of heavy snow fell across extreme northwest Indiana during the evening of the 9th and ended the morning of the 10th. Eight to 10 inches of snow fell over portions of Lake, Porter and LaPorte counties. Some snowfall amounts include: Indiana Dunes - 6.1 inches in Porter county, and LaPorte - 9.5 inches in LaPorte county.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## INDIANA, Northwest

### **INZ002>004 Porter - La Porte - St. Joseph**

<b>30</b>	<b>1800EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>31</b>	<b>1400EST</b>			

A lake effect snow event began during the evening of the 30th and ended during the afternoon of the 30th. The heavy snow band fell across portions of LaPorte, Porter and St. Joseph counties, with the heaviest amounts reported from LaPorte county. Those amounts include; LaPorte - 13 inches, Michigan City - 10.5 inches, and Rolling Prairie - 12.5 inches.

## INDIANA, South Central

NONE REPORTED.

## INDIANA, Southeast

NONE REPORTED.

## INDIANA, Southwest

### **INZ081>082-085>088 Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer**

<b>09</b>	<b>0500CST</b>	<b>0</b>	<b>0</b>	<b>Fog</b>
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Widespread dense fog reduced visibility to a quarter mile or less, resulting in hazardous travel conditions.

### **INZ081>082-085>088 Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer**

<b>15</b>	<b>0600CST</b>	<b>0</b>	<b>0</b>	<b>Fog</b>
	<b>0900CST</b>			

Dense fog reduced visibility to near zero in some parts of southwest Indiana. With temperatures in the lower 20s, a layer of heavy frost also formed. This frost formed on some road surfaces, causing several accidents during the morning commute.

### **INZ081>082-085>088 Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer**

<b>18</b>	<b>0530CST</b>	<b>0</b>	<b>0</b>	<b>Fog</b>
	<b>0900CST</b>			

Patchy dense fog reduced visibility to near zero in some spots. Much like the event on the 15th, the freezing fog caused some slippery road conditions.

### **INZ081>082-085>088 Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer**

<b>30</b>	<b>1400CST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
	<b>2100CST</b>			

An "Alberta Clipper" type of low pressure system produced around 4 inches of snow across southwest Indiana during the afternoon and evening. Specific snowfall reports included 4 inches in downtown Evansville, 5 inches at the University of Southern Indiana near Evansville, and 3.5 inches at the Evansville Airport and McCutchanville. Rockport, Indiana reported 3 inches. The evening rush hour was a mess, with so many accidents that Evansville Police could only respond to major accidents. Persons in fender benders were asked to exchange insurance information and then make a report at a police station.

## IOWA, Central

### **IAZ084>085-095>096 Lucas - Monroe - Wayne - Appanoose**

<b>04</b>	<b>0700CST</b>	<b>0</b>	<b>0</b>	<b>10K</b>	<b>Heavy Snow</b>
	<b>1700CST</b>				

A strong storm system passed to the south of Iowa during the 3rd and left a light dusting of snow. The upper air flow became strong cyclonic northwest. An Alberta clipper type storm system moved southeast with the central crossing the southwest corner of the state. Much of the state received from one to four inches of snow. A narrow band of heavy snow fell over south central Iowa. Amounts in the band were in the 5 to 8 inch range. A narrow band extended from Derby toward Lake Rathbun with the heaviest snowfall reported at Derby where 8 inches fell. The snow caused travel problems statewide as the ground temperatures were above freezing at the onset of the snow. Snow melted on the roads and froze after nightfall. The ice persisted into the morning of the 5th and caused a great deal of traffic problems.

# Storm Data and Unusual Weather Phenomena

December 1997

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## IOWA, Central

**IAZ023>028-  
033>039-044>050-  
057>062-070>075-  
081>086-092>097**

**Pocahontas - Humboldt - Wright - Franklin - Butler - Bremer - Sac - Calhoun - Webster - Hamilton - Hardin - Grundy - Black Hawk - Crawford - Carroll - Greene - Boone - Story - Marshall - Tama - Audubon - Guthrie - Dallas - Polk - Jasper - Poweshiek - Cass - Adair - Madison - Warren - Marion - Mahaska - Adams - Union - Clarke - Lucas - Monroe - Wapello - Taylor - Ringgold - Decatur - Wayne - Appanoose - Davis**

21	1400CST	0	0	88.2K	Ice Storm
22	0700CST				

An upper level low pressure system moved into the southern Rockies and advanced northeast into the midwest. As is often the case during an El Nino winter, there was little cold air in place over Iowa. Even though the surface low passed well to the south of the state, leaving Iowa in what would normally be the snow area of the system, precipitation took the form of freezing rain. Freezing rain and sleet moved into the state during the afternoon on the 21st and spread northeast slowly. The heaviest accumulation of ice was over the south third of the state with ice accretion of one to two tenths of an inch. Amounts were generally under one tenth inch farther north. During the early morning hours of the 22nd, the precipitation changed to light snow for a period of time as the upper low passed over the state. Damage from the storm was relatively minor with spotty reports of power outages and broken tree limbs. Many of the tree limbs fell due to the fact they had been weakened by several very wet snows earlier. Road conditions deteriorated as the freezing rain and sleet advanced north. Though no major travel problems were reported, there were hundreds of reports of cars slipping into ditches.

**IAZ074>075-  
084>086-093>097**

**Marion - Mahaska - Lucas - Monroe - Wapello - Ringgold - Decatur - Wayne - Appanoose - Davis**

24	0900CST 1800CST	0	0	55.6K	Heavy Snow
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An intense upper level low pressure swung northeast across the central U.S. on the 24, bringing a swath of heavy snow across Iowa. A band of five to eight inch snow fell from south central into southeast Iowa during the day Christmas Eve. Some freezing rain was mixed with the snow, however the icing was not a serious problem. Some of the heavier snowfall included 8 inches at Ottumwa, along with several 8 inch reports along the southern tier of counties from Ottumwa west to south of Creston. Seven inches was received in Chariton, with six to eight inches recorded in Poweshiek County. The snow made travel difficult as the consistency of the snow was of the heavy wet variety. Roads were slushy and gradually became snow covered during the late afternoon hours.

## IOWA, East Central and Southeast

**IAZ030-063>068-  
076>078-087>089-  
098>099**

**Clayton - Iowa - Johnson - Cedar - Clinton - Muscatine - Scott - Keokuk - Washington - Louisa - Jefferson - Henry - Des Moines - Van Buren - Lee**

09	1700CST	0	0	Heavy Snow
10	0900CST			

A strong winter storm dumped heavy snow over portions of Southeast Iowa and West Central Illinois resulting in numerous school closures and minor accidents. Most locations received from 3 to 6 inches of snow with isolated heavier amounts up to 8 inches.

**IAZ030-042-  
052>054-063>068-  
076>078-087>089-  
098>099**

**Clayton - Dubuque - Linn - Jones - Jackson - Iowa - Johnson - Cedar - Clinton - Muscatine - Scott - Keokuk - Washington - Louisa - Jefferson - Henry - Des Moines - Van Buren - Lee**

24	1100CST 2130CST	0	0	Heavy Snow
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Snow and heavy snow blanketed much of East Central and Southeast Iowa, and West Central Illinois causing greatly reduced visibilities, slick roads and numerous accidents. Most areas had snowfall amounts from 3 to 6 inches. However, a band of heavier snow produced amounts in the 6 to 8 inch range from southeastern Iowa into western Illinois.

## IOWA, Northeast

NONE REPORTED.

## IOWA, Northwest

NONE REPORTED.

## IOWA, Southwest

**IAZ090>091**

**Fremont - Page**

24	0600CST 1900CST	0	0	Heavy Snow
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A storm system produced 5-6 inches of snow.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			
December 1997									
<b>KANSAS, East</b>									
<b>KSZ008&gt;011-020&gt;021</b>									
	02	2300CST			0	0			Heavy Snow
	03	1100CST							
	Three to five inches of snow fell from North Central Kansas into the portion of Northeast Kansas along the Nebraska boarder.								
<b>KSZ011&gt;012-022&gt;024-026-034-036&gt;040-054&gt;056-058&gt;059</b>									

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## KANSAS, Extreme Southeast

**KSZ073-097 Bourbon - Crawford**

30	1335CST 1400CST	0	0	6K	High Wind (G64)
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Strong low pressure over the mid Mississippi Valley produced sustained northwest winds of 30 to 50 mph across extreme southeast Kansas during the afternoon. The strongest winds were in Fort Scott, where a gust to 64 knots was recorded at the airport damaging an airplane hanger. Two roofs along with many signs and trees were blown down in the Fort Scott area. Also, a few trees were downed by the winds in the Pittsburg area.

## KANSAS, North Central

**KSZ005>007-017>019 Phillips - Smith - Jewell - Rooks - Osborne - Mitchell**

02	1600CST	0	0	0	0	Winter Storm
03	0600CST					

Snow fell across north central Kansas during the night dropping two to three inches of fresh snow. Mitchell county reported the most snowfall with Cawker City at four inches and Hunter measuring six inches of new snow. The snow and cold resulted in slick road conditions the morning of the 3rd and some accidents in the region.

**KSZ005>007-017>019 Phillips - Smith - Jewell - Rooks - Osborne - Mitchell**

21	0400CST	0	4	100K	0	Ice Storm
22	0500CST					

A steady light freezing rain the morning of the 21st left a slippery glaze of ice on area roads and sidewalks. Travel was treacherous on the ice covered roads. The slippery driving conditions were blamed for a two-vehicle collision near Cawker City.

**KSZ005>007-017>019 Phillips - Smith - Jewell - Rooks - Osborne - Mitchell**

23	1800CST	0	0	0	0	Winter Storm
25	1800CST					

North central Kansas was able to enjoy a "White Christmas" as four to eight inches of snow fell beginning December 23. A narrow swath of eight inch snow amounts fell from Plainville to just southwest of Mankato.

## KANSAS, Northeast

**KSZ025-057-060-102>105 Atchison - Miami - Linn - Doniphan - Leavenworth - Wyandotte - Johnson**

21	0500CST 1200CST	0	0			Ice Storm
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The combination of rain and subfreezing temperatures caused icy roads and numerous traffic accidents throughout Northeast Kansas. The Miami County Sheriff's office reported two people killed in traffic accidents as a result of the icy rain. In Kansas City, a multi-vehicle pile up occurred on I-35 just west of State Line resulting in several injuries.

## KANSAS, Northwest

**KSZ041>042 Greeley - Wichita**

08	0600MST 1800MST	0	0			Heavy Snow
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Snowfall of 6 inches covered portions of Greeley and western Wichita Counties.

**KSZ028>029-041>042 Logan - Gove - Greeley - Wichita**

24	1800MST	0	0			Heavy Snow
25	0600MST					

Snowfall of 6 to 7 inches gave a white Christmas.

## KANSAS, Southeast

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

December 1997

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## KANSAS, Southwest

**KSZ030>031-  
043>044**      **Trego - Ellis - Scott - Lane**

09      0242CST      0      0      **Heavy Snow**  
1000CST

Six to eight inches of snow accumulated in a very narrow band from Scott City to Hays. The band was only a couple of miles wide. Either side of this band, amounts ranged from 2 to 4 inches.

**KSZ030>031-  
043>046-063>066-  
076>081-086>090**      **Trego - Ellis - Scott - Lane - Ness - Rush - Finney - Hodgeman - Pawnee - Stafford - Haskell -  
Gray - Ford - Edwards - Kiowa - Pratt - Seward - Meade - Clark - Comanche - Barber**

21      1700CST      0      0      **Ice Storm**  
22      0300CST

Widespread freezing rain occurred east of al line from Scott City to Liberal. Roads were ice-covered causing numerous accidents. There was no structural damage reported.

**KSZ030>031-  
043>046-061>066-  
074>081-084>090**      **Trego - Ellis - Scott - Lane - Ness - Rush - Hamilton - Kearny - Finney - Hodgeman - Pawnee -  
Stafford - Stanton - Grant - Haskell - Gray - Ford - Edwards - Kiowa - Pratt - Morton - Stevens  
- Seward - Meade - Clark - Comanche - Barber**

23      0400CST      0      0      **Winter Storm**  
24      1100CST

Winter storm impacted all of the area producing dangerous conditions for early holiday travellers. Largest amount of snow was at Meade where 15 inches fell. Unofficial amounts to 19 inches were reported in Meade county. Other amounts included...Dodge City 14, Cimarron 12, Manter 12, Liberal and Spearville 10, Jetmore and elkhart 9, Syracuse, Johnson and Kinsley 8, Hays 6, Garden City, Scott City and Hugoton 5 inches. The remainder of the area had 4 inches. There was not a lot of wind so very little drifting was reported. However, the wind did increase dramatically late on the 24th and on the 25th producing considerable blowing and drifting.

## KENTUCKY, Central

**KYZ035**      **Franklin**

24      2000EST      0      0      10K      **High Wind (G50)**  
2100EST

High gradient winds between 8 pm and 9 pm est knocked down numerous trees and power lines and damaged two greenhouses and one house in downtown Frankfort.

## KENTUCKY, Eastern

**KYZ112>113-115-  
118**      **Breathitt - Knott - Perry - Letcher**

26      2300EST      0      0      10K      0      **Heavy Snow**  
27      1300EST

Four to six inches of wet snow brought down tree limbs and power lines. Over 10,000 customers lost electricity during the snow.

## KENTUCKY, Northeast

NONE REPORTED.

## KENTUCKY, Northern

NONE REPORTED.

## KENTUCKY, Southwest

**KYZ001>022**      **Fulton - Hickman - Carlisle - Ballard - Mccracken - Graves - Livingston - Marshall - Calloway -  
Crittenden - Lyon - Trigg - Caldwell - Union - Webster - Hopkins - Christian - Henderson -  
Daviess - Mclean - Muhlenberg - Todd**

09      0400CST      0      0      **Fog**  
0800CST

Widespread dense fog caused hazardous travel conditions. Visibility was below a quarter mile in some areas.

**KYZ001>022**      **Fulton - Hickman - Carlisle - Ballard - Mccracken - Graves - Livingston - Marshall - Calloway -  
Crittenden - Lyon - Trigg - Caldwell - Union - Webster - Hopkins - Christian - Henderson -  
Daviess - Mclean - Muhlenberg - Todd**

18      0530CST      0      0      **Fog**  
0900CST



# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## KENTUCKY, Southwest

Patchy fog reduced visibility to near zero in some spots. With temperatures in the mid 20s, the freezing fog caused some slippery road conditions for early morning commuters.

**KYZ001-006-009-012-017-022** **Fulton - Graves - Calloway - Trigg - Christian - Todd**

**29 0300CST 0900CST 0 0 Snow**

Snow accumulated from 2 to 3 inches near the Tennessee border of west Kentucky. The early morning commute was hampered by snow covered and slippery roads. Specific snowfall amounts included 2 inches in Murray and Hopkinsville, and 3 inches in southern Graves County south of Mayfield. Police and wrecker services were kept busy throughout the morning, mainly because of vehicles skidding off the roads. A couple of injury accidents occurred near Hopkinsville, otherwise traffic problems were minor.

**KYZ014>015-018>020** **Union - Webster - Henderson - Daviess - Mclean**

**30 1400CST 2000CST 0 0 Heavy Snow**

An "Alberta Clipper" type of low pressure system produced around 4 inches of snow across northwest Kentucky, primarily the Henderson and Owensboro area. Specific snowfall amounts included 4 inches at Henderson, 5 inches at Owensboro, and 3 inches in Webster County, just southwest of Henderson. One traffic fatality was blamed on the slippery roads. A one-car accident on the Western Kentucky Parkway, four miles east of the Kentucky State Police post in Hopkins County, claimed the life of a 35-year-old man. An accident involving a tractor trailer rig closed the Pennyryle Parkway just south of Madisonville for several hours. In a six-county area affected by the snow, Kentucky State Police reported 43 accidents, none involving serious injuries. There were 38 other incidents where motorists simply ran off the road.

## LOUISIANA, Northeast

NONE REPORTED.

## LOUISIANA, Northwest

NONE REPORTED.

## LOUISIANA, Southeast

**East Baton Rouge Parish**

**4 S Baton Rouge Arpt 03 0958CST 0 0 Funnel Cloud**

**Livingston Parish**

**1 W Denham Spgs 03 1018CST 0 0 Funnel Cloud**

**Iberville Parish**

**Plaquemine 23 1215CST 0 0 2K Thunderstorm Wind**

Two mobile homes were knocked off blocks, a carport was destroyed, a business's roof covering an outdoor dining area was damaged and shingles were blown off several houses.

## LOUISIANA, Southwest

**Calcasieu Parish**

**Vinton 03 0545CST 0 0 75K Thunderstorm Wind**

Severe thunderstorms blew a roof off a motel in Vinton, damaged a barn, and knocked over several trees.

In Carlyss, one mobile home lost it's roof, and several other mobile homes received minor damage. Several barns and trees were also blown down in Carlyss, which is 5 miles east of Vinton.

**Vernon Parish**

**Leesville 03 0600CST 0 0 50K Lightning**

Lightning struck a home in Leesville. A tree limb had fallen through the dining room ceiling, parts of the northeast corner of the home were blown away, a hole had been knocked in the southern end of the building, and the patio at the rear of the home was destroyed.

Although the owners were home at the time of the incident, no one was injured.

**Calcasieu Parish**

**Lake Charles 03 0602CST 0 0 1.5M Thunderstorm Wind**

Severe thunderstorms caused extensive damage in downtown Lake Charles. A four story hotel that was under construction collapsed, causing 1.25 million dollars worth of damages. Two trailers used by the construction crews were rolled over. Fortunately, this damage occurred one hour before 25 workers were scheduled to begin work for the day.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## LOUISIANA, Southwest

Riverboat casinos recorded 100 mph winds as this system passed through. At one of the casinos, a barn was destroyed, and a fence was blown down. At the Yacht Club, ten boats were blown over. Shingles were blown off of several homes and businesses. A steeple was also blown off a church roof.

### Cameron Parish

<b>Grand Lake</b>	<b>03</b>	<b>0645CST</b>			<b>0</b>	<b>0</b>	<b>10K</b>		<b>Thunderstorm Wind</b>
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A few trees were blown down in Grand Lake.

### Calcasieu Parish

<b>10 E Lake Charles</b>	<b>03</b>	<b>0650CST</b>			<b>0</b>	<b>0</b>	<b>10K</b>		<b>Thunderstorm Wind</b>
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Several trees and power lines were blown down in Iowa.

### Jefferson Davis Parish

<b>5 N Jennings</b>	<b>03</b>	<b>0700CST</b>			<b>0</b>	<b>0</b>	<b>10K</b>		<b>Thunderstorm Wind</b>
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Severe thunderstorm winds blew down several trees and power lines in Elton and Jennings.

### Vernon Parish

<b>Leesville</b>	<b>21</b>	<b>0200CST</b>			<b>0</b>	<b>0</b>	<b>10K</b>		<b>Thunderstorm Wind</b>
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Several trees were blown down during a severe thunderstorm.

### Calcasieu Parish

<b>Lake Charles</b>	<b>23</b>	<b>2030CST</b> <b>2130CST</b>			<b>0</b>	<b>0</b>			<b>Heavy Rain</b>
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SKYWARN spotters recorded three to four inches of rain fell across Lake Charles, Westlake and Sulphur the evening of the 23rd.

### St. Martin Parish

<b>Parks</b>	<b>23</b>	<b>2305CST</b>			<b>0</b>	<b>0</b>	<b>75K</b>		<b>Thunderstorm Wind</b>
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One mobile home was rolled over and destroyed, and another two mobile homes were damaged lightly by severe thunderstorm winds between Parks and St. Martinville. None of the homes were occupied at the time of the incident. Power lines and trees were also blown down.

### St. Mary Parish

<b>Baldwin</b>	<b>23</b>	<b>2330CST</b>			<b>0</b>	<b>0</b>	<b>75K</b>		<b>Thunderstorm Wind</b>
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A wall of a casino was blown down by severe thunderstorm winds in Baldwin.

At Cypremort Point, several homes lost their roofs from high winds.

## MAINE

### MEZ011>022

**Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo**

<b>01</b>	<b>0000EST</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
<b>02</b>	<b>1400EST</b>			

Low pressure deepened rapidly off the coast of New England late on the 30th and early on the 1st, then moved slowly northeastward through the 2nd. The storm brought heavy snow to much of Maine with 4 to 8 inches of accumulation common throughout most of the state, except in southwestern coastal areas where much of the precipitation fell as rain.

### MEZ001>002-

### 005>006-011-017

**Northwest Aroostook - Northeast Aroostook - Northern Penobscot - Southeast Aroostook - Central Penobscot - Interior Washington**

<b>05</b>	<b>0500EST</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
<b>07</b>	<b>0500EST</b>			

A low pressure center moving slowly northeastward in the Atlantic on the 5th was over Nova Scotia on the 6th. Snow fell across much of eastern Maine during a 2-day period. Snowfall accumulations in northeastern Aroostook County were generally 10 to 15 inches while lesser amounts fell to the south and west. Only about 2 inches of snow fell along the downeast coast.

### MEZ018-023>024

**Interior York - Coastal York - Coastal Cumberland**

<b>23</b>	<b>0700EST</b> <b>2300EST</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
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Low pressure moving northeastward from the North Carolina coast brought heavy snow to the southwestern part of the state where accumulations ranged from 4 to 15 inches. Elsewhere in the state, accumulations were generally 1 to 4 inches.

### MEZ005>006-

### 010>011-017

**Northern Penobscot - Southeast Aroostook - Southern Piscataquis - Central Penobscot - Interior Washington**

<b>25</b>	<b>0900EST</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
<b>26</b>	<b>0000EST</b>			

Low pressure moving eastward from the Great Lakes and a second weak low pressure center that developed off the Maine coast brought snow to much of Maine except along the immediate coast. Snowfall accumulations were generally in the 4 to 8 inch range.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## MAINE

with a narrow band of 8 to 12 inches that extended from the central highlands through central sections of eastern Maine.

## MARYLAND, Central

### **MDZ004>005**

#### **Frederick - Carroll**

27 1600EST  
2000EST

0 0

**Snow**

Low pressure developed rapidly along the southeast U.S. coast and raced northeast off of Cape Hatteras. As the low moved north, bands of light to moderate wet snow accumulated between 2 and 3 inches across north central Maryland during the late afternoon and early evening of the 27th. Most of the snow accumulated on grassy surfaces; however, many secondary roads became slushy and/or snow covered for a time.

### **MDZ002>003**

#### **Allegany - Washington**

29 2000EST  
30 0000EST

0 0

2K

**Winter Storm**

### **MDZ004>006- 009>010**

#### **Frederick - Carroll - Northern Baltimore - Montgomery - Howard**

29 2100EST  
30 0100EST

0 0

**Winter Weather**

A fast-moving and rapidly deepening low pressure system raced from the South Carolina coast to east of New Jersey in eight hours. An area of moderate to occasionally heavy snow developed over western North Carolina during the morning and raced through western Virginia and Maryland during the afternoon and early evening. Accumulations ranged from 5 to 9 inches between the Blue Ridge and the Allegheny Plateau. Higher mountainous terrain received between 6 and 11 inches. Additional light snow continued over the far western portion of Allegany Co (MDZ002) into New Year's Eve.

One person died from a heart attack while shoveling the snow in Hagerstown (MDZ003) on the 30th.

Blowing and drifting snow on the 30th created some travel headaches, but problems were minimal since the storm occurred during a period of low traffic between the Christmas and New Year's holidays. Still, numerous nuisance accidents were reported, mainly on the 30th, across western Maryland. Allegheny Power reported between 750 and 1000 customers were without power due to storm-related damage.

East of the Blue Ridge, a mix of snow and sleet accumulated between 1 and 4 inches, with values increasing with elevation. Minor travel problems were noted through the morning of the 30th. In the interior suburbs of Washington and Baltimore, accumulations were an inch or less.

## MARYLAND, Northeast

NONE REPORTED.

## MARYLAND, South

NONE REPORTED.

## MARYLAND, West

### **MDZ001**

#### **Garrett**

06 2000EST  
07 1000EST

0 0

**Heavy Snow**

Generally 3 to 4 inches of snow fell throughout Garrett County. However, up to 6 inches fell in the highest elevations of the county.

Strong, moisture-laden westerly winds up the Allegheny Plateau led to heavy snowfall amounts in the higher elevations of the mountains of western Maryland.

### **MDZ001**

#### **Garrett**

29 1200EST  
30 0500EST

0 0

**Heavy Snow**

Nearly 7 inches of snow fell at McHenry. Six inches fell in Oakland.

A storm system moved from the gulf coast states slowly north along the eastern seaboard and intensified. Heavy snow fell across western Maryland.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage		

December 1997

## MASSACHUSETTS, Central and East

**MAZ004>024** Northern Worcester - Western Middlesex - Western Essex - Eastern Essex - Western Hampshire - Western Hampden - Eastern Hampshire - Eastern Hampden - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol - Western Plymouth - Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket

02 0200EST 0 0 Strong Winds  
2200EST

**MAZ016** Eastern Norfolk

02 0412EST 0 0 High Wind (G51)

A strong storm system that was nearly stationary just east of Nova Scotia combined with high pressure building in from the west to cause strong northwest winds across central and eastern Massachusetts. A peak gust to 59 mph was recorded atop Blue Hill in Milton, while most places had winds gusting to 35 to 45 mph.

**MAZ002>024** Western Franklin - Eastern Franklin - Northern Worcester - Western Middlesex - Western Essex - Eastern Essex - Western Hampshire - Western Hampden - Eastern Hampshire - Eastern Hampden - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol - Western Plymouth - Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket

14 1100EST 0 0 Strong Winds  
1800EST

**MAZ004>007-012>019** Northern Worcester - Western Middlesex - Western Essex - Eastern Essex - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol - Western Plymouth - Eastern Plymouth

14 1200EST 0 0 Snow Squalls  
1330EST

**MAZ016** Eastern Norfolk

14 1217EST 0 0 High Wind (G54)  
1300EST

Strong northwest winds accompanied the arrival of an Arctic airmass. Blinding snow squalls produced white-out conditions for a short time in many places in central and eastern Massachusetts. Thunder-snow was reported at both Hopkinton and Natick. Snow accumulations generally were less than a half inch. High winds occurred in Milton atop Blue Hill, where the Observatory recorded a peak gust to 62 mph and zero visibility in a snow squall. A few other places reporting near zero visibility in the snow included Marblehead, Westwood, Lexington, and Hopkinton. Westfield, in the Connecticut Valley, reported a peak gust to 56 mph. Other peak wind gusts included: Lawrence, 54 mph; Boston, 52 mph; Goshen, 50 mph; Falmouth, Nantucket, and Lexington, 49 mph.

**MAZ002>017** Western Franklin - Eastern Franklin - Northern Worcester - Western Middlesex - Western Essex - Eastern Essex - Western Hampshire - Western Hampden - Eastern Hampshire - Eastern Hampden - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol

23 0900EST 0 0 Heavy Snow  
1500EST

A low pressure system developing off the Delaware coast brought over a foot of heavy snow over a large area, including western and central Massachusetts and much of Norfolk, Middlesex, and Essex Counties in the eastern part of the state. A portion of northern Worcester County and northern Middlesex County received nearly 2 feet of snow! Parts of Bristol and Suffolk Counties received 6 to 8 inches of snow.

The heavy snowfall caught everyone by surprise and was also a surprise to weather forecasters. The low pressure system slowed its forward movement and intensified more than expected. What was very unusual was the extreme intensity of the snowfall, with phenomenal hourly snowfall totals reported by many observers during the morning between 9:30 AM and about Noon. A total of 8 inches fell during one hour in Ayer while 6 inches fell during an hour in both Chelmsford and Shrewsbury. Maximum storm totals occurred in northern Middlesex County, where Dracut had 23.5 inches. Other totals from that area included: Pepperell, 22.0 inches; Ayer and Townsend, 21.0 inches; and Chelmsford, 20.4 inches. In Essex County, totals ranged from 14.5 inches in Methuen to 8 inches in Gloucester and Newburyport. In Worcester County, some totals included: Clinton, 19 inches; Worcester Airport, 18 inches; Shrewsbury, 16.8 inches; Northbridge, 14.0 inches; Ashburnham, 13.5 inches; and Barre Falls, 9.0 inches. Maximum totals in Franklin County included 8 inches in Charlemont and Greenfield. In Hampden County, the maximum was 13.0 inches in East Brimfield. In Hampshire County, Amherst had 16.0 inches. Maximum totals in Norfolk County included 11.1 inches atop Blue Hill in Milton and 10 inches in Bellingham.

Hundreds of autos and trucks became stuck on hilly sections of Route 495 and Route 9. More than 20,000 electric customers lost power at one time or another in Burlington, Waltham, Woburn, Somerville, Newton, and surrounding towns as heavy, wet snow

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## MASSACHUSETTS, Central and East

brought down numerous tree limbs. About 3,400 electric customers lost power in the Merrimack Valley. Most power was restored by the end of the day. Holiday travelers were stranded at Logan International Airport in Boston, where the storm total reached 6.8 inches.

**MAZ005>007-  
012>024**

**Western Middlesex - Western Essex - Eastern Essex - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol - Western Plymouth - Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket**

**29 1900EST 0 0 5.0K Strong Winds**  
**30 1500EST**

**MAZ016-020-  
022>023**

**Eastern Norfolk - Southern Bristol - Barnstable - Dukes**

**30 0900EST 0 0 High Wind (G59)**  
**1230EST**

An intense low pressure system passed to the west of New England, moving north through the Hudson Valley in New York State. This storm produced strong southeast to south-southwest winds across the region and near-record low barometric pressure for the month of December. The lowest readings were around 28.80 inches.

There were several reports of high winds, with a gust to 68 mph recorded at the hurricane barrier in New Bedford and a peak gust to 62 mph recorded on Martha's Vineyard. On Cape Cod, at Chatham, wind gusts were estimated up to 65 mph at the fish pier. A gust to 55 mph was reported from Pocasset near Buzzards Bay. The Blue Hill Observatory in Milton recorded several wind gusts to 58 mph. Trees and wires were reported down in South Dartmouth and sheet metal was reported flying off a building on Pope's Island off Fairhaven. In Cambridge, a street was blocked by debris falling from buildings.

Minor coastal flooding occurred in the New Bedford area. On West Island, about 8 backyards had 1 to 1.5 feet of water in them. There also was a report of 6 to 12 inches of water on a coastal road in South Dartmouth.

## MASSACHUSETTS, West

**MAZ001**

**Berkshire**

**10 1200EST 0 0 Winter Storm**  
**11 0800EST**

During the afternoon of December 10, moderate to heavy snow spread across southern Berkshire County. The snow moved in quickly from the south and fell at a heavy rate shortly after onset. The timing and rate of snowfall caused many traffic problems during the evening commute. The snowfall exhibited a very tight south north cutoff. In northern Berkshire County only a trace of snow was observed while southern areas received a general snowfall of 6 to 12 inches. Some specific snowfall totals included: 10 to 12 inches at Beckett, 8 inches at Southfield, 6 inches at Lenoxdale and 6 inches at Egremont.

**MAZ001**

**Berkshire**

**24 2200EST 0 0 Freezing Rain**  
**25 1000EST**

Late Christmas Eve and early Christmas morning, light freezing rain spread across Berkshire County. Initially the freezing rain was mixed with sleet. The light coating of freezing rain produced hazardous driving conditions especially during the early morning hours. Due to the light traffic flow only scattered accidents occurred. By mid morning the light freezing rain ended as temperatures rose into the middle and upper 30s.

**MAZ001**

**Berkshire**

**29 1600EST 0 0 15K Winter Storm**  
**30 1800EST**

On December 29 and 30, a winter storm tracked from Cape Hatteras to northern New England. This storm produced heavy snow across Berkshire County, with snowfall totals of 5 to 10 inches common. At Pittsfield, 10 inches of snow fell. The heaviest snow occurred in the higher elevations and in the northern part of the county. The wet snow and strong gusty winds caused scattered power outages.

## MICHIGAN, East

**MIZ060>063-  
068>070-075>076-  
082>083**

**Shiawassee - Genesee - Lapeer - St. Clair - Livingston - Oakland - Macomb - Washtenaw - Wayne - Lenawee - Monroe**

**10 0700EST 0 0 Heavy Snow**  
**2000EST**

Low pressure over Missouri on the evening of the 9th, moved east-northeast into eastern Ohio by the evening of the 10th. A broad area of 3 to 8 inches of snow was left across Southeast Lower Michigan. The heaviest snow fell from Livingston county to St. Clair county, south to the Ohio border. Some of the heaviest snow accumulations included 7.0 inches at Dover in Lenawee county, 8.0 inches at Dexter in Washtenaw county, 7.5 inches at Brighton in Livingston county, 7.1 inches at Ortonville in Oakland county,

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## MICHIGAN, East

and 9.0 inches at Port Huron in St. Clair county. Numerous accidents were reported as a result of the snow.

## MICHIGAN, Extreme Southwest

NONE REPORTED.

## MICHIGAN, North

NONE REPORTED.

## MICHIGAN, Upper

**MIZ002>005-009**

**Ontonagon - Houghton - Baraga - Marquette - Gogebic**

**04 0800EST**

**0 0**

**Heavy Snow**

**05 1200EST**

The combination of a surface trough across Upper Michigan, an upper low over Wisconsin and cold northerly winds blowing over the relatively warmer waters of Lake Superior combined to produce heavy lake effect snows over the Lake Superior shoreline counties of west and central Upper Michigan. Heavy snow began across Gogebic and Ontonagon counties around 800 am EST on the 4th. The heavy snow spread east to include parts of Keweenaw, Houghton, Baraga, and Marquette counties by the afternoon of the 4th. The snow was concentrated in lake effect snow bands producing widely varying accumulations across the region. The heavy snow diminished to light snow around noon on the 5th.

Here is a listing of the heavier snow totals by county:

Baraga	Gogebic	Houghton	Keweenaw
Herman 12.0	Ironwood 15.1	Alston 9.0	Phoenix 11.0
Watton 10.4	Ramsay 11.0		
	Watersmeet 9.7		

Marquette	Ontonagon
Marquette Airport 16.3	Bergland 21.0
Carlshend 10.0	Ontonagon 16.0

## MICHIGAN, West

**MIZ037>038-**

**043>044-050-**

**056>057-064-**

**071>072-077>078**

**Mason - Lake - Oceana - Nawaygo - Muskegon - Ottawa - Kent - Allegan - Van Buren - Kalamazoo - Berrien - Cass**

**04 1900EST**

**0 0**

**Lake Effect Snow**

**05 1700EST**

An upper level low pressure system brought colder air across Lake Michigan into western Lower Michigan during the night of Thursday, December 4th through late afternoon Friday, December 5th. West to northwest winds brought lake effect snow showers inland across most of the western counties of the lower peninsula, resulting in snow accumulations which ranged from 1 to 11 inches in the above noted counties. As is typically the case with lake effect, snowfall totals across the region were highly variable in nature. Roads became snow-covered and slippery in the region with the usual increased number of minor accidents associated with snowfall across West Michigan. The morning rush hour was especially hazardous, as heavier snow squalls were reported south of Grand Rapids and Holland across Allegan and Van Buren Counties. Snowfall reports indicated the most significant accumulations were across Mason, Oceana, northern Muskegon, Allegan, Van Buren, northern Cass, and western Kalamazoo Counties. In these areas, accumulations averaged 6 to 11 inches. Snow reports included 11.2 inches in Scottville, 8 inches in Plainwell and Oshtemo, 7.5 inches in Pentwater, and 6 inches in Cassopolis.

**MIZ050>051-**

**056>059-064>067-**

**071>074-077>081**

**Muskegon - Montcalm - Ottawa - Kent - Ionia - Clinton - Allegan - Barry - Eaton - Ingham - Van Buren - Kalamazoo - Calhoun - Jackson - Berrien - Cass - St. Joseph - Branch - Hillsdale**

**10 0100EST**

**0 0**

**Winter Storm**

**1600EST**

A winter storm which tracked across the Ohio Valley region from southwest Indiana into northern Ohio produced an area of heavy, wet snow across the southern third of Michigan's Lower Peninsula. Snow first moved into the southern border counties of the state shortly after midnight on Wednesday, December 10th. Snow ended from west to east during the early afternoon hours. The heaviest snow fell between 6 and 10 am, when snowfall rates of 1 to 2 inches per hour were common along and south of a line from Holland to Grand Rapids to St. Johns in Clinton County. Snow accumulations across the mentioned counties ranged from 3 to 12 inches, with 8 to 12 inch totals concentrated in Eaton, Ingham, and Jackson Counties.

With the heaviest snow falling during the morning rush hour, numerous accidents were reported. Three fatalities were

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property		

December 1997

## MICHIGAN, West

blamed on weather-related, serious traffic accidents. One 18 year-old female was killed when the automobile she was riding in slid into the path of an oncoming school bus, shortly before 8 am in Mason, south of Lansing in Ingham County. The driver, a 17 year-old male was in serious condition upon arriving at a local hospital. Two cars collided on Michigan Highway 66 in Calhoun County around 10:30 am, resulting in a fatality. No information about the victim was available. Another fatal accident claimed the life of a Spring Arbor man who was killed instantly when his automobile was struck by oncoming traffic, after he lost control when trying to pass a county snow plow on southbound U.S. Highway 127 around 3 pm in Jackson County. Several other injury and property damage accidents were reported throughout the storm. Three school bus-car related accidents occurred in a one-hour period in Ingham County, between 7:30 and 8:30 am. Many area schools along and north of Interstate 94 started classes for the day because snow had not yet started falling at the decision-making time of 4-5:30 am, even though Winter Storm Warnings had been posted the night before. However, snow became heavy at the onset, catching many school bus drivers off-guard. Many schools which had opened for the day sent students home early.

The weight of the wet snow caused power outages in Berrien, Branch, Hillsdale, Ingham, and Jackson Counties. Up to 18,000 customers lost power at the height of the storm due to arcing wires and downed branches. Flight delays and cancellations were common at airports across southern Michigan and local bus service was suspended for several hours of the day in Jackson.

Snowfall reports included 10-12 inches in Jackson County, 10 inches in Mason, 7.5 to 9 inches in the city of Lansing, 8.8 inches in Portland, 8 inches in Eaton Rapids, 7 inches in Hastings, 6-7 inches in Kalamazoo, 6.6 inches in Battle Creek, 6 inches in Plainwell, 5.2 inches in Grand Haven, 4-6 inches across the Grand Rapids metropolitan area (4.6 inches at the National Weather Service Office in southeast Grand Rapids), and 4 inches in Muskegon and St. Johns.

**MIZ039-044>045-  
051-065>067-073**

**Osceola - Newaygo - Mecosta - Montcalm - Barry - Eaton - Ingham - Calhoun**

22	1800EST 2230EST	0	0	Freezing Rain
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A brief period of freezing rain affected portions of central and southern Lower Michigan between 6:00 and 10:30pm EST, Monday evening, December 22nd. Although the precipitation was light, a thin sheet of ice formed on sidewalks and roads, resulting in many minor traffic accidents and slide-offs. No serious injuries were reported in the weather-related accidents.

**MIZ043>045-  
050>052-056>057**

**Oceana - Newaygo - Mecosta - Muskegon - Montcalm - Gratiot - Ottawa - Kent**

24	1600EST	0	0	Winter Storm
25	0400EST			

A winter storm tracked northeast from southern Illinois across Indiana and southeast Lower Michigan. The storm weakened as it moved across the state into southern Ontario. A mixture of snow, sleet, and freezing rain spread across the mentioned counties after 4:00pm EST on Christmas Eve. The mixed precipitation was heavy at the onset and resulted in numerous traffic accidents from Kent and Ottawa counties northward. Three people were injured in weather-related traffic accidents in southern Kent County during the late afternoon hours. Snowfall totals ranged from 1.5 to 4 inches in the mention counties. Snowfall reports included 3.5 inches in Muskegon, 3.4 inches in Fremont, 3 inches in Grand Haven, Cedar Springs, Big Rapids, and Edmore, 2.8 inches in Sparta, and 1.3 inches at the National Weather Service Office in Grand Rapids.

**MIZ037>038-043-  
050-056-064-071-  
077>078**

**Mason - Lake - Oceana - Muskegon - Ottawa - Allegan - Van Buren - Berrien - Cass**

30	0700EST	0	0	Lake Effect Snow
31	1300EST			

A northwest wind flow around a strong low pressure system which was moving up the East Coast brought a surge of arctic air south across Lake Michigan from Tuesday morning, December 30th, through midday Wednesday, December 31st. Lake effect snow brought accumulations which ranged from 2 to 12 inches across the counties bordering Lake Michigan. The only inland county which received significant accumulations was Cass County, which received 2 to 4 inches of snow. Major highways affected by the heavy snow showers included Interstate 94 west of Paw Paw, Interstate 196 south of Zeeland, Interstate 96 in Muskegon County, and U.S. Highway 31 along the length of the West Michigan lake shore. Snowfall reports included 12 inches in New Buffalo, 8-12 inches in South Haven area, around 6 inches in the Benton Harbor/St. Joseph area, and 5-8 inches across Muskegon, Oceana, and Lake Counties.

## MINNESOTA, Central and South Central

NONE REPORTED.

## MINNESOTA, Northeast

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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December 1997

## MINNESOTA, Northwest

NONE REPORTED.

## MINNESOTA, Southeast

NONE REPORTED.

## MINNESOTA, Southwest

NONE REPORTED.

## MINNESOTA, West

NONE REPORTED.

## MINNESOTA, West Central

NONE REPORTED.

## MISSISSIPPI, Central

**MSZ037>039-042>054 Attala - Winston - Noxubee - Yazoo - Madison - Leake - Neshoba - Kemper - Warren - Hinds - Rankin - Scott - Newton - Lauderdale - Claiborne - Copiah**

14	0030CST 1400CST	0	0	50K	Heavy Snow
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Light to moderate snow began falling across central Mississippi around 12:30 AM and by the time it ended eight inches of snow was common across the area. This was one of the heavier snowfalls to occur in the Mississippi since 1929. The weight of the snow caused limbs of trees to break off, knocking down power lines and damaging a few roofs of houses.

### **Forrest County**

Hattiesburg

23	0645CST	0	0	Hail (1.75)
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## MISSISSIPPI, North

NONE REPORTED.

## MISSISSIPPI, South

NONE REPORTED.

## MISSISSIPPI, Southeast

NONE REPORTED.

## MISSOURI, East

**MOZ041>042-047>050-059-072 Boone - Audrain - Moniteau - Cole - Osage - Callaway - Gasconade - Crawford**

08	0100CST 0600CST	0	0	Winter Storm
----	--------------------	---	---	--------------

A quick 2 to 4 inches of snow fell across central Missouri during the early morning hours of December 8 causing widespread travel problems. There were numerous auto accidents, with one accident resulting in a death in Columbia. Most schools across the area were closed for the day.

**MOZ009>010-018>019-026>027-034>036-042-051 Scotland - Clark - Knox - Lewis - Shelby - Marion - Monroe - Ralls - Pike - Audrain - Montgomery**

09	1400CST 2000CST	0	0	Winter Storm
----	--------------------	---	---	--------------

An average of 3 to 6 inches of snow fell during the day and early evening of 12/9/97. The heaviest snow fell in a band from Montgomery, Pike and Marion counties in Missouri into Adams and Pike counties in Illinois.

**MOZ009>010-018>019-026>027-034>035-042 Scotland - Clark - Knox - Lewis - Shelby - Marion - Monroe - Ralls - Audrain**

24	1000CST 1900CST	0	0	Winter Storm
----	--------------------	---	---	--------------

Snowfall of 3 to 6 inches fell across Northeast Missouri on the day before Christmas, much to the delight of area children.



# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## MISSOURI, East

Temperatures hovered around the freezing mark helping to keep most area roads in good shape.

## MISSOURI, Lower

NONE REPORTED.

## MISSOURI, Northwest

**MOZ020-054-054**

**Buchanan - Henry**

**01 0000CST**  
**28 2359CST**

**0 0**

**Flood**

Minor flooding occurred along the Missouri River at St Joseph, MO and the South Grand River near Urich, MO in December 1997. The first round of flooding occurred early in the month on the 1st through 3rd, then a second round occurred on the 21st through 24th after several days of rain and snow.

Missouri River  
St Joseph, MO

Flood Stage 17 ft  
Above Flood Stage 12/1 to 12/3  
Crest 17.86 ft from 11/30

South Grand River  
Urich, MO

Flood Stage 24 ft  
Above Flood Stage 12/1 to 12/3  
Crest 26.5 ft from 11/30

Above Flood Stage 12/21 to 12/28  
Crest 26.2 on 12/24

**MOZ001>005-  
011>014-020>022-  
028>030-037>038-  
043>044-053>054**

**Atchison - Nodaway - Worth - Gentry - Harrison - Holt - Andrew - De Kalb - Daviess -  
Buchanan - Clinton - Caldwell - Platte - Clay - Ray - Jackson - Lafayette - Cass - Johnson -  
Bates - Henry**

**21 0500CST**  
**1200CST**

**0 0**

**Ice Storm**

The combination of rain and sub-freezing temperatures resulted in icy roads across much of Northwest and Westcentral Missouri. A man was killed near Phelps City in Atchison County when his vehicle skidded off the icy roadway and landed in a drainage ditch. Numerous other non-injury accidents were reported in St Joseph and throughout the Kansas City Metro area.

## MISSOURI, Southeast

**MOZ076-086>087-  
100-107>112-114**

**Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott -  
Mississippi - New Madrid**

**09 0300CST**  
**0700CST**

**0 0**

**Fog**

Widespread dense fog caused hazardous travel conditions during the early morning hours. Visibility was as low as a quarter mile in some areas.

**MOZ076-086>087-  
100-107>112-114**

**Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott -  
Mississippi - New Madrid**

**18 0530CST**  
**0900CST**

**0 0**

**Fog**

Patchy dense fog reduced visibility to near zero in spots. With temperatures in the mid 20s, the freezing fog caused some slippery road conditions for early morning commuters.

# Storm Data and Unusual Weather Phenomena

December 1997										
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Property	Crops	Character of Storm
Killed										
Injured										
Crops										
Character of Storm										
<b><u>MISSOURI, Southwest</u></b>										
<b>Mcdonald County</b>										
Tiff City	09	1902CST			0	0				Hail (0.88)
<b>Vernon County</b>										
Deerfield	24	0630CST			0	0	0			Flash Flood
One to two inches of rain fell on saturated ground during the early morning resulting in flooding of low water crossings along the Marmaton River.										
<b><u>MONTANA, Central</u></b>										
<b>MTZ010 Eastern Glacier/Eastern Pondera/Toole/Liberty</b>										
16		1635MST			0	0				High Wind (G35)
<b>MTZ010 Eastern Glacier/Eastern Pondera/Toole/Liberty</b>										
17		0000MST			0	0				High Wind (G44)
		0400MST								
Sustained winds.										
<b>MTZ010 Eastern Glacier/Eastern Pondera/Toole/Liberty</b>										
17		0655MST			0	0				High Wind (G42)
		0840MST								
Sustained winds near 40 kts.										
<b>MTZ011 Blaine/Hill</b>										
27		0538MST			0	0				High Wind (G62)
Peak winds reported near the Port of Wild Horse										
<b>MTZ010 Eastern Glacier/Eastern Pondera/Toole/Liberty</b>										
27		1155MST			0	0				High Wind (G52)
		1535MST								
Max gust of 52 kts with sustained winds 35-45 kts.										
<b>MTZ013 Fergus/Chouteau</b>										
27		1400MST			0	0				High Wind (G50)
<b>MTZ012 Cascade/Eastern Teton/Judith Basin</b>										
27		1456MST			0	0				High Wind (G36)
Sustained winds reported in Great Falls										
<b>MTZ012 Cascade/Eastern Teton/Judith Basin</b>										
27		1700MST			0	0				High Wind (G57)
<b><u>MONTANA, East</u></b>										
NONE REPORTED.										
<b><u>MONTANA, South</u></b>										
<b>MTZ028 Wheatland/Park/Sweet Grass</b>										
26		2158MST			0	0				High Wind (G66)
		2200MST								
<b>MTZ028 Wheatland/Park/Sweet Grass</b>										
27		0416MST			0	0				High Wind (G66)
		0418MST								
66 knot wind gust in Livingston.										
<b>MTZ028 Wheatland/Park/Sweet Grass</b>										
27		0607MST			0	0				High Wind (G66)
		0609MST								
66 knot wind gust in Livingston.										
<b><u>MONTANA, West</u></b>										
<b>MTZ007 Blackfoot/Butte/Pintlar Region</b>										
09		0100MST			0	0				Heavy Snow
10		0100MST								
Discovery Ski Area received 8 inches of snow.										
<b>MTZ004 Lower Clark Fork Region</b>										
16		0400MST			0	0				Heavy Snow
18		0400MST								

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage		

December 1997

## MONTANA, West

Lookout Pass Ski Area reported 26 inches of snow in 48 hours, 16 of it coming in the first 24 hour period.

## NEBRASKA, Central

NEZ038

**Custer**

02 0500CST  
1200CST

0 1 45K Fog

Icy roads and foggy conditions caused several accidents in which drivers were unable to see the intersection or slid off the road and rolled.

NEZ038

**Custer**

07 1800CST  
08 1800CST

0 0 20K Winter Storm

Icy roads caused a few accidents in which vehicles slid into each other or went off the road and rolled.

NEZ069

**Chase**

25 1200MST  
28 1700MST

0 1 26K Winter Storm

Icy roads and strong winds caused several accidents in which vehicles slipped on patches of ice and went into the ditch and rolled.

## NEBRASKA, East

NEZ092>093

**Pawnee - Richardson**

09 1500CST  
10 0200CST

0 0 Heavy Snow

A storm system produced 5-6 inches of snow in Richardson and Pawnee counties.

NEZ089>093

**Gage - Johnson - Nemaha - Pawnee - Richardson**

24 0600CST  
1900CST

0 0 Heavy Snow

A storm system produced 5 to 6 inches of snow.

NEZ011>012-  
016>017-030>032-  
042>043-050>053-  
065>066-078-  
088>089

**Knox - Cedar - Antelope - Pierce - Boone - Madison - Stanton - Platte - Colfax - Butler -  
Saunders - Douglas - Sarpy - Seward - Lancaster - Saline - Jefferson - Gage**

30 0800CST  
1500CST

0 0 40K High Wind (G52)

Strong northwesterly winds on the back side of low pressure which moved southeast from the Dakotas through western Iowa and Missouri caused some minor structural and tree damage. A few power outages also resulted.

## NEBRASKA, Extreme Northeast

NONE REPORTED.

## NEBRASKA, Extreme Southwest

NEZ079>080

**Dundy - Hitchcock**

24 1800MST  
25 0600MST

0 0 Heavy Snow

Snowfall of 6 to 7 inches gave a white Christmas.

## NEBRASKA, South Central

NEZ039>041-  
046>049-060>064-  
072>077-082>087

**Valley - Greeley - Nance - Sherman - Howard - Merrick - Polk - Dawson - Buffalo - Hall -  
Hamilton - York - Gosper - Phelps - Kearney - Adams - Clay - Fillmore - Furnas - Harlan -  
Franklin - Webster - Nuckolls - Thayer**

07 1200CST  
09 1800CST

0 0 100K 0 Ice Storm

Travel became treacherous across south central Nebraska as freezing drizzle coated area roads with a thin layer of ice. The freezing drizzle began the afternoon of the 7th, then gave way to light snow by the 9th. Though amounts were light, the snow and ice likely played a role in several accidents in the region. Many drivers lost control of their vehicles on the icy roads.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	December 1997	
					Killed	Injured	Property	Crops	Character of Storm

## NEBRASKA, South Central

**NEZ039>041-046>049-060>064-072>077-082>087** Valley - Greeley - Nance - Sherman - Howard - Merrick - Polk - Dawson - Buffalo - Hall - Hamilton - York - Gosper - Phelps - Kearney - Adams - Clay - Fillmore - Furnas - Harlan - Franklin - Webster - Nuckolls - Thayer

21	0400CST	0	0	100K	0	Ice Storm
22	0500CST					

A steady light freezing rain covered area roads with a layer of ice, resulting in several accidents into early Monday morning. The slick roads may have played a role in a two-vehicle crash near Bruning the morning of the 21st. One person died in the accident.

**NEZ062>063-072>077-082>087** Hall - Hamilton - Gosper - Phelps - Kearney - Adams - Clay - Fillmore - Furnas - Harlan - Franklin - Webster - Nuckolls - Thayer

23	1800CST	0	0	0	0	Winter Storm
25	0400CST					

A blanket of one to five inches of fresh snow fell across south central Nebraska providing for a "White Christmas". Superior and Hebron took top snow honors with five inches of new snow.

## NEBRASKA, West

### Box Butte County

Countywide	08	0100MST			0	1	5K	0	Icy Roads
	09	2200MST							

### Cheyenne County

Countywide	08	0100MST			0	0	5K	0	Icy Roads
	09	2200MST							

### Kimball County

Countywide	08	0100MST			2	1	40K	0	Icy Roads
	09	2200MST							

M73VE, F59VE

### Morrill County

Countywide	08	0100MST			0	0	5K	0	Icy Roads
	09	2200MST							

### Scotts Bluff County

Countywide	08	0100MST			0	0	5K	0	Icy Roads
	09	2200MST							

Snowpacked and icy roads contributed to many vehicular accidents, one of which killed a 73-year-old man and his 59-year-old wife on Highway 71 when a semitrailer truck lost control, crossed the center line and struck their car head-on. Both vehicles caught fire and were totaled. The numerous other accidents involved property damage and some minor injuries but no additional fatalities.

### NEZ001

#### Sioux

27	0900MST	0	0	0	0	High Wind (G52)
28	0600MST					

**NEZ002-019>021-054** Dawes - Scotts Bluff - Banner - Morrill - Kimball

27	2100MST	0	1	3K	0	Blizzard
28	0600MST					

Ground blizzard conditions were created by strong winds blowing over freshly fallen snow. Visibility of only 8 feet was reported on Nebraska highway 20 from Chadron east to Sheridan County at approximately 2100. Highway 71 was closed between Kimball and Gering, and Interstate 80 were closed in the vicinity of Kimball due to whiteout conditions with sustained winds of 40 MPH. Approximately 35 tractor trailers, one bus and 15 cars stayed in the parking lot of a fast food restaurant that remained open to provide safe haven to travellers. Harrison reported wind gusts of 60 MPH at approximately 1200. Numerous traffic accidents occurred, including a single car rollover 5 miles west of Bridgeport that injured the driver and caused \$3K damage to the car.

## NEVADA, North

**NVZ007>008-011>012**

**Northern Elko - Southwest And South Central Elko - White Pine - Lander/Eureka**

08	0700PST	0	0			Heavy Snow
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A winter storm dropped locally heavy snow over parts of Northeast and East Central Nevada. 12 hour snowfall totals ending at 7:00 am included: 5 inches in downtown Ely, 5 inches at Ruth, 4 inches in Eureka, 3 inches at Ely airport and Spring Creek, and 2 inches at both Wildhorse Reservoir and Owyhee.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Number of Persons	Estimated Damage Property	Crops	Character of Storm	December 1997
<b><u>NEVADA, North</u></b>											
<b>NVZ006</b>											

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

December 1997

## **NEW HAMPSHIRE, Southern**

### **NHZ011**

#### **Cheshire**

**14 1200EST  
1230EST**

**0 0**

**Snow Squalls**

### **NHZ011>012**

#### **Cheshire - Hillsborough**

**14 1200EST  
1900EST**

**0 0**

**Strong Winds**

Strong northwest winds accompanied the arrival of an Arctic airmass. Wind gusts to 35 to 45 mph were reported across Cheshire and Hillsborough Counties. Snow squalls caused white-out conditions in both Rindge and Jaffrey around 12:15 PM.

### **NHZ011>012**

#### **Cheshire - Hillsborough**

**23 1000EST  
1600EST**

**0 0**

**Heavy Snow**

A low pressure system developing off the Delaware coast moved to the northeast, passing southeast of Cape Cod, and dumped over a foot of heavy snow to parts of southern New Hampshire. The storm system intensified rapidly and the heavy snow was a surprise to everyone, including weather forecasters. Snow fell at rates of several inches per hour in much of the area.

The heavy snow caused traffic problems throughout the region. In Nashua, where four tractor-trailer trucks jackknifed, the Everett Turnpike was closed. State police reported that many cars skidded off Route 89 and Route 93. There were no serious injuries reported. Many people left work during the early afternoon but became stranded for hours in traffic jams while making the commute home. School children also were delayed getting home for hours when their buses became stuck or caught in the traffic jams. Some children did not arrive home until the early evening. Some snowfall totals in Hillsborough County included: Nashua, 20.5 inches; Amherst, 17.5 inches; Bedford, 14 inches; Manchester, 13.7 inches; and Hollis, 10 inches. In Cheshire County, Jaffrey reported 10.5 inches and Rindge, 9.5 inches.

## **NEW JERSEY, Northeast**

### **NJZ002**

#### **Western Passaic**

**10 1230EST  
11 0630EST**

**0 0**

**Heavy Snow**

With cold air in place, a low pressure system developed off the Mid-Atlantic Coast during the late afternoon and evening. The low intensified as it moved east-northeast away from the area overnight.

The heaviest snow, which fell from 2 pm to 8 pm on December 10th, made driving and walking hazardous. At both Charlotteburg and West Milford, 7 inches of snow fell. At Oakridge, 6 inches of snow fell. Heavy wet snow also accumulated on trees, which caused some tree limbs to fall on power lines.

### **Bergen County**

#### **Countywide**

**29 1400EST  
2300EST**

**0 0**

**Heavy Rain**

### **Passaic County**

#### **Countywide**

**29 1400EST  
2300EST**

**0 0**

**Heavy Rain**

### **Union County**

#### **Countywide**

**29 1400EST  
2300EST**

**0 0**

**Heavy Rain**

A low pressure system developed off the Carolina Coast Monday morning, December 29th, while a high pressure system was northeast of the area. As the low moved north along the coast, it rapidly intensified. The low moved over New York City (Brooklyn) during the evening and passed over New England during Tuesday December 30th.

A wind-swept heavy rain preceded and accompanied this low pressure system. Thunder and lightning accompanied some of the heavier downpours. Rainfall amounts generally ranged from 2 to 4 inches, which caused some flooding of roads and low-lying poor drainage areas. Heavy rain also caused many small rivers and streams to rise near bankfull levels.

Here are selected rainfall amounts for:

- o Passaic County - rainfall amounts ranged from 1.02 inches at Charlotteburg to 3.96 inches at West Milford.
- o Bergen County - rainfall amounts ranged from 1.33 inches in Midland Park to 3.42 inches in Oakland.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property		

December 1997

## NEW JERSEY, Northeast

- o Union County - rainfall amounts ranged from 1.62 inches at Elizabeth to 3.27 inches at Canoe Brook.

## NEW JERSEY, South and Northwest

**NJZ007>010**

**Warren - Morris - Hunterdon - Somerset**

10	0900EST	0	0		Wintry Mix
11	0700EST				

**NJZ001**

**Sussex**

10	1000EST	0	0	0	Heavy Snow
11	0800EST				

A low pressure system that moved through the Delmarva Peninsula coastal waters brought heavy snow to Sussex County and a wintry mix of precipitation across the rest of Northwest New Jersey. Snow began across the region during the morning on the 10th. Enough warm air at higher levels of the atmosphere moved into the area for precipitation to change over to a rain and freezing rain mixture by sunset on the 10th, except for Sussex County where precipitation remained mainly snow. The heaviest precipitation was over by midnight on the 10th, but lighter snow and/or flurries lingered until around sunrise on the 11th.

Snowfall accumulations averaged around 6 inches in Sussex County and 1 to 3 inches elsewhere. The wintry precipitation caused accidents throughout the area, although no serious ones were reported. Specific accumulations included 6 inches in Wantage and Sussex (Sussex County), 5.5 inches in Montague (Sussex County), 5 inches in Newton (Sussex County), 3 inches in Long Valley (Morris County), 2.4 inches in Chatham (Morris County), 2 inches in Boonton (Morris County) and Pottersville (Somerset County) and 0.8 inches in Flemington (Hunterdon County) and Stewartsville (Warren County).

**NJZ008>010-015**

**Morris - Hunterdon - Somerset - Mercer**

22	1300EST	0	0	0	Freezing Rain
23	0200EST				

**NJZ001-007**

**Sussex - Warren**

22	1400EST	0	0	0	Winter Storm
23	0600EST				

A high pressure system moved across the Middle Atlantic and New England States on the 21st and 22nd. It brought dry and cold air into the region. Early Monday morning (the 22nd) a secondary low pressure system was developing off the South Carolina Coast as its primary system was weakening in the Tennessee Valley. The South Carolina low intensified and moved quickly up the Eastern Seaboard and was just south of Long Island at 7 a.m. EST on the 23rd. While warmer air arrived across New Jersey above the ground, the low moved too quickly (coupled with a land-based northeast flow trajectory) to permit surface temperatures to get above freezing. This was especially true in Warren and Sussex Counties. Precipitation started briefly as light snow and sleet the afternoon of the 22nd, but once it intensified during the night time hours of the 22nd and 23rd, it fell mainly as freezing rain. Temperatures did slowly rise overnight and most locations in Hunterdon, Mercer, Morris and Somerset Counties were above the freezing mark by the morning of the 23rd.

An inch or less of snow fell across the area and between a quarter to a half an inch of ice accrued on exposed surfaces. Driving was hazardous on untreated roadways and the freezing rain contributed to numerous accidents, although no very serious ones were reported.

**NJZ001-008**

**Sussex - Morris**

24	2300EST	0	0	0	Freezing Rain
25	0430EST				

A low pressure system developed over southern Texas the morning of the 23rd and moved northeast and reached southern Missouri the morning of the 24th and extreme southwest Ontario the morning of the 25th. A second low pressure system did form along the Delmarva Peninsula and was near the New Jersey Coast on the morning of the 25th. This second low stalled the southerly flow of warm air enough to have precipitation start briefly as freezing rain in a few of the deeper valleys in northwestern Morris County and Sussex County.

**NJZ001-007>010-012>013-015-017>020-022**

**Sussex - Warren - Morris - Hunterdon - Somerset - Middlesex - Western Monmouth - Mercer - Gloucester - Camden - Burlington - Western Ocean - Western Atlantic**

27	0800EST	0	0	0	Snow
28	0000EST				

A low pressure system developed over the South Carolina coastal waters the night of the 26th and move rapidly northeast and farther offshore during the 27th. This low spread a swath of light snow across much of New Jersey. Snow began falling during the morning on the 27th and ended by midnight in all areas. The snow was mixed with rain at times across southern New Jersey, especially near Delaware Bay and the coast. The unseasonably warm weather during December limited snowfall accumulations to grassy areas during the daylight hours, although snow did start to stick to all surfaces the evening of the 27th. Accumulations averaged 1 to 3 inches. Smaller accumulations occurred along the immediate coast and the counties bordering Delaware Bay. The heaviest snow occurred in two bands: from Hunterdon to Morris Counties and from western Atlantic County through southeastern Burlington County and Southern Ocean County. Skies cleared toward the morning of the 28th and untreated roads were slippery.

# Storm Data and Unusual Weather Phenomena

December 1997									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
NEW JERSEY, South and Northwest									
Accumulations included 3.5 inches in Estell Manor (Atlantic County), 3 inches at the Atlantic City International Airport, Chatham and Marcella (both in Morris County), 2.6 inches in Wertsville (Hunterdon County), 2.3 inches in Hightstown (Mercer County), 2 inches in Newton (Sussex County) and 1.8 inches in Atsion (Burlington County).									
Atlantic County									
Countywide	29	1500EST 2200EST			0	0		0	Heavy Rain
Burlington County									
Countywide	29 30	1500EST 0000EST			0	0		0	Heavy Rain
Ocean County									
Countywide	29 30	1500EST 0000EST			0	0		0	Heavy Rain
Hunterdon County									
Countywide	29 30	1700EST 0200EST			0	0		0	Heavy Rain
Mercer County									
Countywide	29 30	1700EST 0200EST			0	0		0	Heavy Rain
Middlesex County									
Countywide	29 30	1700EST 0200EST			0	0		0	Heavy Rain
Monmouth County									
Countywide	29 30	1700EST 0200EST			0	0		0	Heavy Rain
Somerset County									
Countywide	29 30	1700EST 0200EST			0	0		0	Heavy Rain
Morris County									
Countywide	29 30	1800EST 0300EST			0	0		0	Heavy Rain
NJZ013>014-024>026	Western Monmouth - Eastern Monmouth - Eastern Cape May - Eastern Atlantic - Eastern Ocean								
	29	1800EST 2300EST			0	0		0	Coastal Flooding
NJZ013>014-020-026	Western Monmouth - Eastern Monmouth - Western Ocean - Eastern Ocean								
	29 30	2000EST 0000EST			0	0		0	High Wind (G53)

A low pressure system formed to the lee of the Southern Rockies the morning of December 28th and moved east into the Tennessee Valley the morning of the 29th. A second low pressure system formed along the South Carolina Coast the morning of the 29th and intensified rapidly as it moved northward and became the main low pressure system. The low moved inland along the New Jersey shore the night of the 29th and entered the state close to the Little Egg Harbor Inlet and proceeded north along the coastal counties. By 7 a.m. EST on the 30th it was located in southern Vermont.

This low pressure system brought heavy rain to a large part of the state, high winds to Monmouth and Ocean Counties as it was intensifying and some minor tidal flooding at the times of the evening high tide on the 29th. The heavy rain in most places coincided with the incoming tide and this exacerbated the poor drainage flooding along the coastal communities.

In the New Jersey coastal counties, in Monmouth County, the heavy rain caused the collapse of a home in the Stonehurst Development in Freehold Township. The basement wall gave in and the home was deemed uninhabitable. The combination of the heavy rain and tides caused flooding and road closures in Highlands, Keyport, Monmouth Beach, Port Monmouth, Sea Bright and Union Beach. Union Beach was one of the harder hit communities with barricades all over town. In Hazlet, the heavy rain forced the closure of sections of New Jersey State Route 36. In Ocean County, the tides and heavy rain forced the closure of several main roadways and one traffic circle in Long Beach Township, Ship Bottom and Surf City. In addition to the heavy rain and tides, wind gusts reached around 60 mph and knocked down trees and power lines. Part of a 90-foot-tall tree fell on top of a unit of the Bayview Condominium in Highlands (Monmouth County). Numerous power lines were reported down in Long Branch (Monmouth County). GPU Energy reported about 6,300 homes and businesses lost power from Middletown Township in Monmouth County south through Toms River in Ocean County. Peak wind gusts included 61 mph in Brighton Beach and 57 mph



# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

December 1997

## NEW JERSEY, South and Northwest

in Harvey Cedars (both in Ocean County). Farther south along the shore, the rain was not as heavy (especially in Cape May County) and did not coincide as well with the high tide. The highest tides that evening included 6.9 feet above mean low water in Cape May, 6.4 feet above mean low water in Atlantic City, 5.2 feet above mean low water in Sea Bright and 3.1 feet above mean low water in Ship Bottom on Manahawkin Bay. Tidal departures were between 2.1 and 2.8 feet above normal at the times of high tide.

Heavy rain also fell throughout a large part of the state, particularly during the evening of the 29th. Storm totals averaged around 2.00 inches and caused the typical urban and poor drainage flooding. Hardest hit were the Raritan Basin counties of Hunterdon, Middlesex and Somerset. Several streets "notorious" for flooding in those counties were closed, but the main stem rivers stayed within their banks. Storm totals included 2.8 inches in Lakehurst (Ocean County), 2.73 inches in Margate (Atlantic County), 2.1 inches in New Lisbon (Burlington County), 2.08 inches in Iselin (Middlesex County), 1.96 inches in Freehold (Monmouth County), 1.77 inches in Boonton (Morris County), 1.69 inches in Hightstown (Mercer County), 1.6 inches in Belle Mead (Somerset County) and Wertsville (Hunterdon County). Storm totals from Camden County south were generally under an inch.

**NJZ001-007**

### **Sussex - Warren**

29	1700EST	0	0	0	Wintry Mix
30	1200EST				

A low pressure system formed to the lee of the Southern Rockies the morning of December 28th and moved east into the Tennessee Valley the morning of the 29th. A second low pressure system formed along the South Carolina Coast the morning of the 29th and intensified rapidly as it moved northward and became the main low pressure system. The low moved inland along the New Jersey shore the night of the 29th and by 7 a.m. EST on the 30th it was located in southern Vermont.

Sussex and Warren Counties were far enough to the west of the low pressure system's storm track for precipitation to start as snow around sunset on the 29th, before changing over to sleet and rain during that evening and then go back to snow during the morning of the 30th. The duration of precipitation as snow was longest in the northwest part of Sussex County. Accumulations in Sussex County average 3 to 5 inches and accumulations in Warren County averaged between 1 and 3 inches. Precipitation ended as snow a bit farther southeast in New Jersey also, but accumulations were generally under an inch. Accumulations included 6.5 inches in Wantage (Sussex County), 4 inches in Newton (Sussex County), 3 inches in Montague (Sussex County) and 1 inch in Hackettstown (Warren County).

## NEW MEXICO, Central and North

**NMZ002-002-004-010-017**

### **Northwest Mountains Including Jemez - Sangre De Cristo Mountains - Sandia/Manzano Mountains - Capitan/Northern Sacramento Mountains**

02	0600MST	0	0	Heavy Snow
03	2100MST			

Heavy snows developed across the mountains of central and northern New Mexico with ski areas in Lincoln, Santa Fe and Taos counties reporting 12 to 16 inches of fresh powder. Los Alamos set a new daily record with 10 inches.

**Chaves County**  
4 W Hagerman

02	1525MST	0.1	50	0	0	Tornado (F0)
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A thunderstorm which developed along a cold front moving into south central Chaves County produced a small, brief tornado. The tornado formed in an environment of northeast surface winds and moderate southwest winds aloft. This is only the second recorded tornado for December in New Mexico. Previously a tornado was reported December 26, 1966 near Pojoaque in Santa Fe County.

**NMZ005>007-010>013-016>021-026**

### **Northeast Highlands - Harding - Far Northeast Plains - Sandia/Manzano Mountains - Central High Plains/Estancia Valley County - Conchas Lake/Guadalupe - Quay - Lincoln County High Plains/Hondo Valley - Capitan/Northern Sacramento Mountains - De Baca - Chaves County Plains - Roosevelt - Curry - Guadalupe Mountains Of Chaves County**

21	1800MST	0	0	2.5M	4M	Winter Storm
25	2359MST					

**NMZ010**

### **Sandia/Manzano Mountains**

22	1900MST	0	0	High Wind (G61)
	2359MST			

**Bernalillo County**  
5 SE Tijeras

27	1830MST	1	0	Hypothermia/Exposure
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M69OU  
A series of heavy snow events produced totals of 15 to 30 inches across eastern and central New Mexico just before Christmas. Periods of light snow actually began about the 20th and then intensified during the 22nd through the 25th as tropical moisture began to feed a large, nearly stationary upper level low over southwest New Mexico. Heaviest snow was centered over Chaves, Lincoln, De Baca, Guadalupe, San Miguel, Quay and Torrance Counties. Roswell and Chaves County were especially hard hit where heavy wet snow pulled down power lines, trees, numerous small sheds, plus porch and driveway coverings. Numerous roads and highways across eastern New Mexico including sections of Interstate 40 between Albuquerque and Santa Rosa were closed,

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## NEW MEXICO, Central and North

stranding hundreds of Christmas travellers. Vaughn, population 300, swelled to nearly 3000 people at one point with travellers forced into nearly all available shelter and private homes. Road clearing was overwhelmed by the widespread, deep snow and the steady winds that followed between the 26th and the 31st producing drifts as high as 6 to 10 feet. Some ranching areas north of Roswell to Fort Sumner and west into Torrance and Lincoln counties saw road closures that lasted 10 to 14 days into January. Ranchers were unable to feed and water stranded herds throughout the period and eventually relief efforts included air drops of nearly 400 tons of hay. Livestock losses were finally confirmed at near 10000 sheep and cattle, including 3000 yearling dairy animals which piled up against each other and suffocated during the height of the storm on the 23rd and 24th at a stock yard near Dexter in Chaves County. Direct losses were estimated at about \$6.5 million, but indirect costs for clearing and repairing roads and highways reached as high as \$20 million. Winds gusting 60-70 mph were also reported across eastern Albuquerque on the 19th and the 22nd as the upper level storm brought strong east winds over the top of the nearby Sandia and Manzano Mountains. One 69 year old man died from exposure in eastern Bernalillo County after he left his vehicle which had become stuck in a snowdrift.

### **Mckinley County**

<b>Gamercio</b>	<b>27</b>	<b>0600MST</b>	<b>1</b>	<b>0</b>	<b>Hypothermia/Exposure</b>
A 28 year old woman was found dead. Overnight low temperature at Gallup was -7 degrees.					
F28OU					

### **Taos County**

<b>Taos</b>	<b>28</b>	<b>0600MST</b>	<b>1</b>	<b>0</b>	<b>Hypothermia/Exposure</b>
A 62 year old Taos woman was found dead in the side yard of her home. The death appeared to be an accidental fall and exposure to subzero temperatures.					
F62OU					

## NEW MEXICO, South Central and Southwest

NONE REPORTED.

## NEW MEXICO, Southeast

### **NMZ027>029**

#### **Guadalupe Mountains Of Eddy County - Eddy County Plains - Lea**

<b>20</b>	<b>0400MST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
	<b>1600MST</b>			

The first of three upper level storms to hit New Mexico within one week started snowing in Eddy County before dawn. By the end of the storm the northern 2/3 of Eddy County had four inches or more of snow. The extreme northern portions of the county were hit hardest with Hope receiving nine inches. In Lea County the heavy snows were mainly confined to the northern third of the county. In southeastern Lea County the precipitation was intense, but was mainly in the form of rain.

### **NMZ027>029**

#### **Guadalupe Mountains Of Eddy County - Eddy County Plains - Lea**

<b>22</b>	<b>1700MST</b>	<b>0</b>	<b>0</b>	<b>100K</b>	<b>Heavy Snow</b>
<b>23</b>	<b>0800MST</b>				

Motorists were stranded in their vehicles near Queen in the Lincoln National Forest along Highway 137 and were rescued by the Sheriffs Deputies.

The second in the series of storm systems dumped heavy snow two days after storm #1. This system was characterized by very strong lift in a deformation zone northeast of the center of upper level low pressure. The actual passage of the upper low was relatively quiet with only some flurries in the mountains as the lift stayed ahead of the upper low to the northeast.

Heaviest snows were in Eddy County with Hope again leading the way with 10 inches and Lakewood with 8 inches. Four to six inches of snow were common around much of the county. U.S. Highway 285 north of Artesia and U.S. Highway 82 west of Artesia were closed. Power was knocked out over much of northern Eddy County with the heavy, wet snow bringing down power lines in some instances.

Having people isolated without power plus little means to assist these people with county resources, Governor Gary Johnson declared a State of Emergency in Eddy County and other counties north and west. This declaration allowed State of New Mexico assistance in the form of personnel and equipment as well as to coordinate of their implementation.

Northern Lea County was again hit harder than the southern end of the county with 4 inches reported at Tatum.

### **NMZ027>029**

#### **Guadalupe Mountains Of Eddy County - Eddy County Plains - Lea**

<b>25</b>	<b>0100MST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>26</b>	<b>0100MST</b>			

The last in the series of storms systems in one week passed through southeast New Mexico on Christmas Day, dumping 6+ inches of snow over most of Eddy County and 4+ inches over much of Lea County. This storm affected the area longer than the previous two events with snow falling in some part of southeast New Mexico for 24 hours.

In northwestern Eddy County, Hope finished the three events with an incredible 29 inches of snow.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## NEW YORK, Central

**NYZ009-018-036**

**Northern Oneida - Onondaga - Madison**

<b>06</b>	<b>0200EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>07</b>	<b>0400EST</b>			

The combination of a low pressure trough moving southward through the region and lake effect snow bands behind this feature produced bursts of moderate to heavy snow across the northern half of Onondaga county, extreme northern Madison county, and northern portions of Oneida county. Snowfall for this time period generally ranged from 6 to 9 inches, with the greatest amounts found over the higher elevations. Some specific totals included Marcellus in Onondaga county - 6 inches, Forestport in Oneida county - 7.5 inches, and Boonville in Oneida county - 8.5 inches.

**NYZ015>018-022>025-036-044>046-055>057**

**Yates - Seneca - Southern Cayuga - Onondaga - Steuben - Schuyler - Chemung - Tompkins - Madison - Cortland - Chenango - Otsego - Tioga - Broome - Delaware**

<b>10</b>	<b>1100EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>11</b>	<b>0300EST</b>			

A complex storm system, with one center in the Ohio Valley and another off the mid-atlantic coast, brought a round of heavy wet snow to most of central New York. Heavy snow began falling during the late morning hours of the 10th over the central southern tier and Finger Lakes regions of New York, then spread eastward over the rest of central New York by mid to late afternoon. Significant snow persisted well into the evening before mixing with sleet, freezing rain, and rain and also tapering off across New York's southern tier. Snow did not taper off to flurries or freezing drizzle until after midnight from the northern Finger Lakes region eastward to the Mohawk Valley.

For the most part, snowfall totals for this event ranged from 5 to 9 inches. A band of 9 to 12 inch amounts were found from northern Steuben, northern Chemung, and Schuyler counties in New York across portions of the Finger Lakes and northern Susquehanna regions. Some of the greater totals included Burdett in Schuyler county - 12 inches, Hornell and Avoca in Steuben county - 10 inches, Auburn in Cayuga county - 10 inches, Willett and Truxton in Cortland county - 9 inches.

**NYZ009-015>018-022>025-036>037-044>046-055>057-062**

**Northern Oneida - Yates - Seneca - Southern Cayuga - Onondaga - Steuben - Schuyler - Chemung - Tompkins - Madison - Southern Oneida - Cortland - Chenango - Otsego - Tioga - Broome - Delaware - Sullivan**

<b>29</b>	<b>1700EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>30</b>	<b>1300EST</b>			

A storm system rapidly intensified off the New Jersey coast during the evening of the 29th, then moved very slowly northward overnight and during the day on the 30th. This system threw substantial atlantic moisture inland over a cold air mass in place across central New York. This resulted in a period of intense snowfall from late at night on the 29th until midday on the 30th. A narrow deformation zone developed from the Syracuse area southward into the central southern tier during this time frame. Snowfall totals were significantly enhanced within this band.

In general, event totals ranged from 10 to 15 inches across central New York. However, amounts of between 20 and 30 inches were common from the Syracuse metro area southward along the I-81 corridor to Cortland, then westward to the Elmira/Corning area. Some specific amounts included Homer in Cortland county - 27 inches, Ithaca and Groton in Tompkins county - 24 inches, Syracuse airport in Onondaga county - 24 inches, Veterans and Horseheads in Chemung county - 24 inches, and Danby in Tompkins county - 22 inches.

## NEW YORK, Coastal

**NYZ070**

**Northern Westchester**

<b>10</b>	<b>1245EST</b>	<b>0</b>	<b>2</b>	<b>Snow</b>
<b>11</b>	<b>0700EST</b>			

With cold air in place, a low pressure system developed off the Mid-Atlantic Coast during the late afternoon and evening. The low intensified as it moved east-northeast away from the area overnight.

The heaviest snow, which fell from 2 pm to around 8 pm on December 10th, made driving and walking hazardous. Two motorists lost control of their cars which resulted in accidents at 7:30 pm and 8:15 pm in Cortlandt. Wet snow also accumulated on trees, which caused some tree limbs to fall on power lines across higher terrain.

**NYZ067**

**Orange**

<b>10</b>	<b>1300EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>11</b>	<b>0700EST</b>			

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops		

## NEW YORK, Coastal

With cold air in place, a low pressure system developed off the Mid-Atlantic Coast during the late afternoon and evening. The low intensified as it moved east-northeast away from the area overnight.

The heaviest snow, which fell from 2 pm to 8 pm on December 10th, made driving and walking hazardous. At both Port Jervis and Middletown, 6 inches of snow fell. Heavy wet snow also accumulated on trees, which caused some tree limbs to fall on power lines.

### NYZ067

#### Orange

29	1500EST	0	0	Winter Storm
30	0000EST			

A low pressure system developed off the Carolina Coast Monday morning, December 29th, while a high pressure system was northeast of the area. As the low moved north along the coast, it rapidly intensified. The low moved over New York City (Brooklyn) during the evening and passed over New England on Tuesday, December 30th.

A mixture of rain, sleet, and snow gradually changed to mainly snow across the higher terrain of Western Orange County and a wind-swept mixture of snow and sleet elsewhere. Snowfall accumulations ranged from 4 to 6 inches across the higher elevations of Western Orange County and from 2 to 4 inches across Eastern Orange County. All roads in Orange County became hazardous for driving.

### NYZ077-080>081

#### Nassau - Southwest Suffolk - Southeast Suffolk

29	2045EST	0	0	High Wind (G59)
30	1600EST			

A low pressure system developed off the Carolina Coast Monday morning, December 29th, while a high pressure system was northeast of the area. As the low moved north along the coast, it rapidly intensified. The low moved over New York City (Brooklyn) during the evening preceded by high winds and heavy rain.

East to northeast winds increased rapidly by evening. The highest winds occurred from 8 pm to midnight. Wind speeds were sustained from 30 to 40 mph. Wind gusts were measured at 50 knots at the Fire Island USCG Station and 59 knots at Long Beach. At the Ambrose Light Tower Bouy, northeast winds were sustained at 52 knots with gusts to 60 knots at 10 pm. At Bouy 44025, east winds were sustained at 35 knots with gusts to 47 knots at 9 pm.

High winds also developed on the back side of this system as it passed the area on Tuesday December 30th. Here are selected high wind gusts in Southeast Suffolk County:

- o 56 knots at the Shinnecock USCG Station at 2 pm.
- o 52 knots at Plum Island at 4 pm.
- o 50 knots at East Hampton Airport at 11:50 am.

### NYZ073-080>081

#### Bronx - Southwest Suffolk - Southeast Suffolk

29	2342EST	0	0	Coastal Flooding
30	1130EST			

A low pressure system developed off the Carolina Coast Monday morning, December 29th, while a high pressure system was northeast of the area. As the low moved north along the coast, it rapidly intensified. The low moved over New York City (Brooklyn) during the evening and passed over New England on Tuesday, December 30th.

The low was preceded by high winds and heavy rain. High astronomical tides combined with strong east to northeast winds caused moderate coastal flooding in the Bronx. Water remained trapped in the inland bays and moderate coastal flooding occurred with the morning high tide across the Suffolk County mainland shores.

Specifically:

- o People in 6 houses at Edgewater (in the Bronx) were evacuated.
- o In Mastic Beach, 45 people evacuated their homes in the vicinity of Riviera Drive.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## NEW YORK, Coastal

- o In Patchogue, about 25 people evacuated their homes.
- o In other areas (West Hampton, Bayport, Bellport, and Blue Point), water rose up to about 2 feet in the streets.

Widespread minor coastal flooding was reported across all remaining shores of Suffolk and Nassau County during Tuesday morning's high tides.

## NEW YORK, East

**NYZ051>053-  
058>061-063>066**

**Western Albany - Eastern Albany - Western Rensselaer - Western Greene - Eastern Greene - Western Columbia - Eastern Columbia - Western Ulster - Eastern Ulster - Western Dutchess - Eastern Dutchess**

10	1200EST	0	0	Winter Storm
11	0800EST			

During the afternoon of December 10, moderate to heavy snow spread across eastern New York from the southern Catskills and mid Hudson Valley northward to just south of the Capital District. The snow moved in quickly from the south and fell at a heavy rate shortly after onset. The timing and rate of snowfall caused many traffic problems during the evening commute. At Marlboro in southern Ulster County, two tractor-trailers got stuck across U. S. Route 9W. This caused traffic to back up for more than four miles and forced the road to close for approximately four hours. In Dutchess County, a tractor-trailer got stuck going up a hill and blocked U. S. Route 9 north of Hyde Park for four hours during the evening. The snowfall exhibited a very tight south north cutoff. For example, in Albany County the Albany County Airport received one inch of snow while Alcove in the extreme southern portion of the county received 8 inches. Some other specific snowfall totals included: 7 inches at Berne in Albany County, 8 inches at Ghent in Columbia County, 7 inches at Poughkeepsie in Dutchess County, 8 inches at Cairo in Greene County and 9 inches at Kerhonkson in Ulster County.

**NYZ032>033-  
038>043-047>054-  
058>061-063>066**

**Northern Herkimer - Hamilton - Southern Herkimer - Fulton - Montgomery - Northern Saratoga - Warren - Washington - Schoharie - Western Schenectady - Eastern Schenectady - Southern Saratoga - Western Albany - Eastern Albany - Western Rensselaer - Eastern Rensselaer - Western Greene - Eastern Greene - Western Columbia - Eastern Columbia - Western Ulster - Eastern Ulster - Western Dutchess - Eastern Dutchess**

24	2200EST	0	0	Freezing Rain
25	1000EST			

Late Christmas Eve and early Christmas morning, light freezing rain spread across eastern New York from south to north. Initially the freezing rain was mixed with sleet. The light coating of freezing rain produced hazardous driving conditions especially during the early morning hours. Due to the light traffic flow only scattered accidents occurred. By mid morning the light freezing rain ended in most areas as temperatures rose into the middle and upper 30s.

**NYZ032>033-  
038>042-047>049-  
051-058-063**

**Northern Herkimer - Hamilton - Southern Herkimer - Fulton - Montgomery - Northern Saratoga - Warren - Schoharie - Western Schenectady - Eastern Schenectady - Western Albany - Western Greene - Western Ulster**

29	1600EST	0	0	155K	Winter Storm
30	1800EST				

On December 29 and 30, a winter storm tracked from Cape Hatteras to northern New England. This storm produced heavy snow across the Catskills, eastern Mohawk Valley, southern Adirondacks, northern Saratoga County and the surrounding higher terrain north and west of the Capital District. The heavy wet snow caused scattered power outages, especially in the Mohawk Valley and northern Catskills. Power outages were most widespread in southern Herkimer, Fulton, Montgomery and Schoharie Counties. At Amsterdam in Montgomery County, power was out for approximately eleven hours. Across the remainder of eastern New York, the precipitation fell as a mix of snow, sleet and rain. Due to this mixed precipitation event, snow totals only reached 2 to 5 inches in this region. Some specific snowfall totals included: 19 inches at Summit in Schoharie County, 15 inches at Windham in western Greene County, 15 inches at Old Forge in northern Herkimer County, 11 inches at Indian Lake in Hamilton County, 18 inches at Little Falls in southern Herkimer County, 14 inches at Slide Mountain in western Ulster County, 9 inches at Warrensburg in Warren County and 11 inches at Caroga Lake in Fulton County.

## NEW YORK, North

**NYZ028-031-  
034>035**

**Northeast Clinton - Southwest Clinton - Western Essex - Eastern Essex**

01	0000EST	0	0	20K	Heavy Snow
02	0800EST				

An area of low pressure off the Middle Atlantic coast Sunday night (11/30/97) moved to near Cape Cod early Monday (12/1/97) and continued to move northeast thereafter. Snow and freezing rain developed during late Sunday evening (11/30/97) and continued in the form of periods of snow Monday (12/1/97) into early Tuesday (12/2/97). The heaviest snow fell in Clinton and

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops		

## NEW YORK, North

Essex counties, and a few reports included:

Ellenburg Depot (Clinton county).....15.0 inches

Ray Brook (Essex county).....11.5 inches

### NYZ027-030

#### Northern Franklin - Southern Franklin

01 0000EST

0

0

10K

Light Snow

02 0800EST

An area of low pressure off the Middle Atlantic coast Sunday night (11/30/97) moved to near Cape Cod early Monday (12/1/97) and continued to move northeast thereafter. Snow and freezing rain developed during late Sunday evening (11/30/97) and continued in the form of periods of snow Monday (12/1/97) into early Tuesday (12/2/97). In Malone NY (Franklin county) 5 1/2 inches of snow accumulated.

### NYZ026>031-034>035

#### Northern St. Lawrence - Northern Franklin - Northeast Clinton - Southern St. Lawrence - Southern Franklin - Southwest Clinton - Western Essex - Eastern Essex

05 1600EST

0

0

Light Snow

06 1500EST

A storm system over the Canadian maritimes Saturday (12/6/97) resulted in considerable moisture rotating across northern New York. Generally between 2 and 4 inches fell across northern New York with a few higher amounts in the Adirondacks. A few representative snow accumulations included:

Malone (Franklin county).....3.5 inches

Ray Brook (Essex county), Ellenburg Depot (Clinton county) Canton (St Lawrence county).....2.5 inches

### NYZ026>031-034>035

#### Northern St. Lawrence - Northern Franklin - Northeast Clinton - Southern St. Lawrence - Southern Franklin - Southwest Clinton - Western Essex - Eastern Essex

22 0000EST

0

0

Light Snow

23 1200EST

A storm system over the eastern Great Lakes region Monday evening (12/22/97) weakened as it moved northeast across northern New York during Tuesday (12/23/97). A second storm developed off the New Jersey coast early Tuesday (12/23/97) and moved northeast of the area by Tuesday night (12/23/97). Generally between 2 and 5 inches of snow fell across the region with the heaviest snow in the Adirondacks. A few snow accumulations included:

Newcomb (Essex county).....5.0 inches

Tupper Lake (Franklin county).....3.5 inches

Canton (St Lawrence county).....4.0 inches

### NYZ030>031-034

#### Southern Franklin - Southwest Clinton - Western Essex

25 0100EST

0

0

Light Snow

1300EST

A storm system in the Great Lakes region early Thursday (12/25/97) moved northeast into Canada during the day. Another storm developed off the New Jersey coast early Thursday (12/25/97) and moved northeast to coastal Maine Thursday night (12/25/97). In portions of the Adirondacks 3 to 4 inches of snow fell...otherwise across northern New York less than 2 inches fell.

### NYZ026>031-034>035

#### Northern St. Lawrence - Northern Franklin - Northeast Clinton - Southern St. Lawrence - Southern Franklin - Southwest Clinton - Western Essex - Eastern Essex

29 2300EST

0

0

190K

Winter Storm

30 2200EST

A major storm system moved rapidly northeast from coastal North Carolina on Monday (12/29/97) to southern New Jersey late Monday night (12/29/97) and across northern New England during Tuesday (12/30/97) and into Canada Tuesday night. Snow spread across the region late Monday night (12/29/97) and continued through Tuesday (12/30/97). Several traffic accidents were reported throughout the area.

In New York, the heaviest snow fell in the Adirondacks with 25 inches the greatest amount at Tupper Lake (Franklin county) with lesser amounts along the Canadian border where Malone (Franklin county) received 8.5 inches. Specific snow accumulations included:

Tupper Lake (Franklin county).....25.0 inches

Malone (Franklin county).....8.5 inches

Lake Placid (Essex County).....21.0 inches

Ausable Forks (Essex county).....12.6 inches

Riverview (Clinton county).....20.0 inches

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops		

## NEW YORK, North

peru (Clinton county).....12.0 inches  
Star Lake (St. Lawrence county).....19.0 inches

## NEW YORK, West

**NYZ010-019-  
019>020**

### **Erie - Chautauqua - Cattaraugus**

**05 1200EST 0 0 40K Heavy Snow**  
**06 1330EST**

Cold air crossing the warm waters of Lake Erie produced lake effect snow squalls southeast of the lake. Up to 14 inches of snow fell over parts of the western southern tier. The heavy snow caused the closing of the New York State Thruway from Ripley to the Pennsylvania state line. Numerous auto accidents were blamed on the heavy snow. One woman was killed in an auto accident when she lost control of her car on a snow-covered road. Several other injuries also occurred in car accidents.

**NYZ006-006-008-  
008**

### **Oswego - Lewis**

**06 0715EST 0 0 36K Heavy Snow**  
**2130EST**

Cold air crossing the warm waters of Lake Ontario produced lake effect snow squalls east of the lake. Up to 20 inches of snow fell. Several auto accidents were blamed on the snowy road conditions.

**NYZ010>012-  
012>014-019>021**

### **Erie - Genesee - Wyoming - Livingston - Ontario - Chautauqua - Cattaraugus - Allegany**

**10 1440EST 0 0 107K Heavy Snow**  
**1900EST**

Moisture associated with low pressure approaching the area overspread the region. Most locations had a burst of snow which fell at the rate of one to two inches per hour for several hours. The heaviest snow fell at the worst possible time, creating havoc with the rush hour traffic. Numerous auto accidents were blamed on the storm and several school districts were forced to close early. Snowfall totals ranged from four to six inches in the Buffalo and Rochester metro areas to a foot of heavy, wet snow across the higher elevations of the Finger Lakes and the southern tier. Specific snowfall amounts included: 13" in Ellicottville; 12" in Arkwright, Perrysburg, Portageville, and Arcade; and 10" in Stockton, South Dayton, Belmont, Perry, and Springville.

**NYZ006-019>021**

### **Oswego - Chautauqua - Cattaraugus - Allegany**

**22 1800EST 0 0 72K Ice Storm**  
**2200EST**

An ice storm during the late afternoon left slick roads across the western southern tier. Numerous auto accidents occurred. Ice accumulated up to 1/2" and combined with several inches of snow to create hazardous conditions.

**NYZ003>008-  
012>014-020>021**

### **Monroe - Wayne - Northern Cayuga - Oswego - Jefferson - Lewis - Wyoming - Livingston - Ontario - Cattaraugus - Allegany**

**30 0600EST 0 0 184K Heavy Snow**  
**2120EST**

A strong storm moved up the east coast of the U.S. and dropped up to a foot and a half of snow across the Finger Lakes and eastern Lake Ontario regions. The heavy snow downed power lines and trees east of Rochester. Numerous auto accidents, several with injuries, were a result of the snow. Strong winds combined with the snowfall to produce blowing and drifting snow resulting in significantly reduced visibilities.

**NYZ003>006-019**

### **Monroe - Wayne - Northern Cayuga - Oswego - Chautauqua**

**31 0715EST 0 0 38K Heavy Snow**  
**1045EST**

A cold west to northeast flow across the warm waters of Lakes Erie and Ontario produced lake effect snow squalls along parts of the southeast shores of the lakes. Snowfall amounts ranged from eight to ten inches during the 24-hour storm.

## NORTH CAROLINA, Central

**NCZ007-021>023-  
038>039-073**

### **Person - Forsyth - Guilford - Alamance - Davidson - Randolph - Stanly**

**29 0800EST 0 0 Winter Storm**  
**1800EST**

A Winter Storm affected the western and central portions of North Carolina. Snow fell over the western piedmont with a mixture of snow, sleet, and rain over the central piedmont. Rain fell to the east.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops		

## NORTH CAROLINA, Central

Snow developed over the western piedmont of North Carolina just after sunrise and continued through the day. The snow tapered off in the late afternoon. The main rain / snow line set up from near Salisbury northeast to Greensboro and extended northeast to the North Carolina / Virginia border, just west of Roxboro. Snow fell to the west of this line, while rain fell to the east. Along the narrow transition zone from near Salisbury northeast to Roxboro, a mixture of rain and snow fell, occasionally mixed with sleet.

Accumulations of snow were heaviest in the city of Winston-Salem and points west and north of the city. Totals there were from 6 to 8 inches, with 4 to 6 inches of snow in Davidson and Guilford counties, including the cities of Lexington and Greensboro. Near the snow to rain transition line...snow accumulations were limited to 1 to 3 inches in a zone from Albemarle in Stanly county northeast through Randolph county including Asheboro and into Alamance and Person counties. Burlington and Roxboro reported around 2 inches of snow.

Hundreds of traffic accidents were reported in Davidson, Forsyth, Guilford, Randolph, and Alamance counties. Power outages were also heaviest in Forsyth county.

## NORTH CAROLINA, Central Coastal

NONE REPORTED.

## NORTH CAROLINA, Extreme Southwest

<b>NCZ060&gt;061</b>	<b>Cherokee - Clay</b>						
	30 0500EST	0	0				<b>Winter Storm</b>
	31 1100EST						

A series of fast-moving upper level disturbances moved across southwest North Carolina, causing heavy snow shower activity. Amounts were generally 4" to 8", with locally higher amounts in higher elevations.

## NORTH CAROLINA, North Coastal

NONE REPORTED.

## NORTH CAROLINA, Northwest and North Central

<b>NCZ001-018</b>	<b>Ashe - Watauga</b>						
	05 1000EST	0	0				<b>Heavy Snow</b>
	06 1600EST						

Moderate to occasional heavy snow developed during the morning hours on the 5th and continued until the afternoon hours on the 6th. Snowfall amounts were mainly in the 4 to 5 inch range with higher amounts on west facing slopes in the western portions of the Ashe and Watauga Counties. Hazardous road conditions resulted in several minor traffic accidents.

<b>NCZ001-018</b>	<b>Ashe - Watauga</b>						
	29 0600EST	0	0				<b>Heavy Snow</b>
	30 0600EST						

Moderate to heavy snow developed during the morning hours on the 29th and continued into the morning hours on the 30th. Snow accumulations were generally in the 6 to 10 inch range. Hazardous road conditions resulted in numerous traffic accidents.

<b>NCZ002&gt;004-019&gt;020</b>	<b>Alleghany - Surry - Stokes - Wilkes - Yadkin</b>						
	29 0700EST	1	0				<b>Heavy Snow</b>
	1800EST						

Moderate to heavy snow developed during the morning hours on the 29th and continued into the evening hours. Snow accumulations were generally in the 6 to 10 inch range. Hazardous road conditions resulted in numerous traffic accidents. A man died of exposure in Pilot after his wheelchair got stuck in the snow and overturned just before midnight on the 29th. M470U

<b>NCZ005</b>	<b>Rockingham</b>						
	29 0830EST	0	0				<b>Heavy Snow</b>
	1900EST						

Moderate to heavy snow developed during the morning hours on the 29th and continued into the evening hours. Snow accumulations were generally in the 4 to 8 inch range. Hazardous road conditions resulted in numerous traffic accidents.

## NORTH CAROLINA, South Coastal

NONE REPORTED.



# Storm Data and Unusual Weather Phenomena

December 1997									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
NORTH CAROLINA, Southwest									
NCZ033-048>050	Avery - Madison - Yancey - Mitchell								
	05	0500EST			0	0			Heavy Snow
	06	0900EST							
NCZ051>053-058	Swain - Haywood - Buncombe - Graham								
	05	0500EST			0	0			Snow
	06	0900EST							
Light snow in a strong northwest flow lasted for over 24 hours and resulted in a general 1-3 inch snowfall across the counties bordering Tennessee. Heavier snow showers over the last 6 hours, during the early morning of the 6th, resulted in total accumulations in the high elevations from Madison county to Avery county, of 4-6 inches.									
NCZ033-049>050	Avery - Yancey - Mitchell								
	08	1100EST			0	0			Snow
	09	0400EST							
NCZ048-052>055-059-062-064>067	Madison - Haywood - Buncombe - McDowell - Burke - Northern Jackson - Macon - Transylvania - Henderson - Polk - Rutherford								
	08	1100EST			0	0			Wintry Mix
	09	0400EST							
A mix of snow, sleet and freezing rain spread from west to east across the mountains, foothills and some piedmont counties of North Carolina. One to three inches of snow fell in the northern mountains. One to two inches of snow and sleet fell in the central and southern mountains and was topped off with some freezing rain. A thin coating of ice from sleet and freezing rain covered areas east of the mountains. Roads were very treacherous, especially in the central and southern mountains. Numerous accidents were reported, including a six tractor trailer pile up on Interstate 40 near Candler.									
NCZ033-048>051-062	Avery - Madison - Yancey - Mitchell - Swain - Macon								
	27	0000EST 1500EST			0	0			Heavy Snow
NCZ052>055-058>059-063>065	Haywood - Buncombe - McDowell - Burke - Graham - Northern Jackson - Southern Jackson - Transylvania - Henderson								
	27	0000EST 1500EST			0	0			Snow
Snow accumulated in general, up to 3 inches across the mountains, except for some of the higher elevations, where 4-6 inches were common.									
NCZ034>037-054>057-062-069	Caldwell - Alexander - Iredell - Davie - McDowell - Burke - Catawba - Rowan - Macon - Lincoln								
	29	0530EST 1500EST			0	0			Heavy Snow
NCZ066>068-070>072-082	Polk - Rutherford - Cleveland - Gaston - Mecklenburg - Cabarrus - Union								
	29	0530EST 1500EST			0	0			Snow
Snow moved north across the foothills and piedmont during the morning and became heavy north and west of the Charlotte area before ending in the middle of the afternoon. Snowfall ranged between 1 and 4 inches across the southern foothills and southern piedmont, to 4-8 inches across the northern foothills and northwest piedmont. In addition, Macon county in the southern mountains received up to 5 inches of snow before the middle of the morning. There were hundreds of traffic accidents and a few thousand people in the foothills were without power for a while.									
NCZ033-048>053-058>059-062>065	Avery - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - Graham - Northern Jackson - Macon - Southern Jackson - Transylvania - Henderson								
	29	1000EST			0	0			Heavy Snow
	30	1500EST							
Snow began during the day of the 29th and lasted well into the 30th as a strong storm system moved northeast through the Carolinas. Snowfall ranged from 2-6 inches in the lower elevations, to generally 4-12 inches in the higher elevations. Some of the highest peaks ended up with between 15 and 23 inches.									
NCZ057	Rowan								
	30	0600EST 0900EST			0	0			Icy Roads
Icy roads in Rowan county the morning after a significant snowstorm, contributed to many traffic accidents.									

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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December 1997

## NORTH CAROLINA, Southwest

**NCZ033-048>053-058>059-063>065** **Avery - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - Graham - Northern Jackson - Southern Jackson - Transylvania - Henderson**

30	1700EST	0	0	Heavy Snow
31	2100EST			

Widespread, wind-blown heavy snow developed as a strong storm system intensified in the northeastern U.S. and directed cold, moist air in a strong northwest flow, into the mountains. By the evening of the 31st, 4-6 inches of new snow accumulated basically along and south of Interstate 40, with over 12 inches common north of there. Very windy conditions accompanied the heavy snow, creating near blizzard conditions at times, especially at elevations above 3000 feet. Snow depths in the highest elevations due to the snow of the past three days were near 3 feet.

## NORTH DAKOTA, Central and West

NONE REPORTED.

## NORTH DAKOTA, East

NONE REPORTED.

## OHIO, East

NONE REPORTED.

## OHIO, North

**OHZ013>014** **Geauga - Ashtabula**

05	0200EST	0	0	Heavy Snow
07	0500EST			

**OHZ011>012-022** **Cuyahoga - Lake - Portage**

06	0200EST	0	0	Heavy Snow
07	0100EST			

A prolonged period of lake effect snow began during the early morning hours on the 5th in Ashtabula and Geauga Counties; then, on the 6th, expanded south and west and continued moving inland through the early morning hours on the 7th. A predominantly west wind up to 25 miles per hour brought persistent squalls, with blowing and drifting snow causing whiteouts and a number of traffic accidents. Total storm amounts generally ranged from six to ten inches with heavier amounts in Ashtabula County where Conneaut received 14 inches of snow.

**OHZ011-013-021>022** **Cuyahoga - Geauga - Summit - Portage**

30	0800EST	0	0	Heavy Snow
31	1900EST			

Lake effect snow developed after the passage of an arctic cold front. The short fetch northwest flow kept amounts relatively light considering the long duration, but a persistent band brought unusually heavy lake effect snow to northern Portage County and southeast Cuyahoga County. Average amounts were six to eight inches with some higher snow totals of 14 inches in Twinsburg (Summit County), 13 inches in Solon and 12 inches in Bedford Heights (both in Cuyahoga), 11 inches each in Mantua and Aurora and 13 inches in Streetsboro (all in Portage), and 10 inches in Chardon (Gauga).

## OHIO, Northwest

NONE REPORTED.

## OHIO, Southeast

NONE REPORTED.

## OHIO, Southwest

NONE REPORTED.

## OKLAHOMA, Eastern

**Craig County**

3 W White Oak	09	1750CST	0	0	Hail (0.88)
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**Craig County**

3 W White Oak	09	1759CST	0	0	Hail (0.88)
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# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## OKLAHOMA, Eastern

### **Delaware County**

Bernice 09 1830CST 0 0 Hail (0.75)

### **Delaware County**

Bernice 09 1830CST 0 0 Thunderstorm Wind (G52)

### **Delaware County**

Grove 09 1845CST 0 0 Hail (0.88)

An isolated severe thunderstorm developed in southern Craig County of northeast Oklahoma during the late afternoon of December 9th and moved east into northern Delaware County. Thunderstorm winds gusted to 60 miles an hour in Bernice, and dime size hail also fell at Bernice. Nickel size hail covered the ground at the Grove Airport, and dime to nickel size hail nearly covered the ground at White Oak.

## OKLAHOMA, Extreme Southeast

NONE REPORTED.

## OKLAHOMA, Panhandle

### **OKZ001>002**

#### **Cimarron - Texas**

22 2100CST 0 0 Heavy Snow

23 0900CST

A strong upper level storm system over southern New Mexico moved into the Texas Panhandle and produced snowfall of eight inches across the western Oklahoma Panhandle and four to six inches across the central Oklahoma Panhandle.

### **OKZ003**

#### **Beaver**

23 1800CST 1 0 Heavy Snow

24 0600CST

The strong upper level storm system moved northeast out of the Texas Panhandle and produced heavy snow across the eastern Oklahoma Panhandle. Beaver county reported from twelve to sixteen inches of snow. A Concordia, Kansas man was found dead on a county road four miles west of Turpin, Oklahoma in Beaver county after being stranded in the snow. M51OU

### **OKZ001>002**

#### **Cimarron - Texas**

28 0200CST 0 0 High Wind (G52)

0600CST

An area of low pressure in the middle levels of the atmosphere interacted with a surface high pressure system over the lee of the Rockies to produce strong winds across the western Oklahoma Panhandle. Sustained winds of 35 to 40 knots were reported along with gusts of 44 to 52 knots.

## OKLAHOMA, Western, Central and Southeast

### **OKZ031**

#### **Seminole**

09 1635CST 0 0 6K Gradient Wind

Gusty west and northwest gradient winds associated with a passing cold front lifted the roof from a pawn shop in Wewoka. Although the winds were sustained at 20 to 25 mph and gusting to only 30-35 mph at the time, the roof was lifted and flipped into an adjacent alley. The roof hit several power lines, cutting power to most of the northern half of Wewoka.

The roof was poorly constructed, consisting of tin nailed to old wooden beams, which apparently were not well attached to the main structure.

### **OKZ004>005-**

### **009>011-014>017-**

### **021>022**

#### **Harper - Woods - Ellis - Woodward - Major - Roger Mills - Dewey - Custer - Blaine - Beckham - Washita**

20 2300CST 0 0 Ice Storm

21 2100CST

Freezing rain fell across a large portion of western Oklahoma from late evening of the 20th into the evening of the 21st. Ice accumulations up 3/4 inch downed trees and power lines. Numerous large trees limbs were snapped, littering the streets of towns throughout the region. Tens of main power lines and countless secondary lines were also downed, cutting power to thousands of western Oklahomans. Canton (Blaine County) and Mooreland (Woodward County) were particularly hard-hit with power outages that lasted over 2 days in some cases.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## OKLAHOMA, Western, Central and Southeast

**OKZ004>007-009>012-014>017-021>023-027-038** **Harper - Woods - Alfalfa - Grant - Ellis - Woodward - Major - Garfield - Roger Mills - Dewey - Custer - Blaine - Beckham - Washita - Caddo - Grady - Comanche**

23	2300CST	0	0	Heavy Snow
24	0600CST			

Rain began changing from rain to snow over western Oklahoma during the evening of December 23rd. The wet, heavy snow continued through the night and ended before sunrise on Christmas Eve. Portions of western Oklahoma west of an Enid-Chickasha line were blanketed with 2 or more inches of snow. Lawton also reported an isolated snow accumulation of 2 inches.

Within the heavy snow area, the heaviest snow fell in Harper County, where Laverne received 11 inches. A larger area of heavy snow (with amounts over 5 inches) extended from northern Roger Mills County to eastern Woodward County, with the following snow totals: Cedardale...8 inches, Arnett...7 inches, Mackie...7 inches, Reydon...6 inches, Mutual...6 inches, Freedom...5 inches, Fargo...5 inches.

**OKZ023-039>041-046** **Caddo - Stephens - Garvin - Murray - Carter**

26	0000CST 0900CST	0	0	Heavy Snow
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Heavy snow began falling across south-central Oklahoma and western parts of north Texas late Christmas night and lasted until mid-morning on the 26th. Many areas saw snow accumulations of 2 inches or more, with isolated totals up to 4 inches.

The heavier amounts of 4 inches were reported in southern Caddo County near Apache and in Garvin County at Hennepin. Pauls Valley and Healdton measured 3 inches, while much of the remainder of south-central Oklahoma saw 1 to 2 inches.

The snow melted rapidly during the late morning and afternoon as temperatures rose into the 40s.

## OREGON, Central and East

**ORZ016>017** **Lower Columbia Basin - Foothills Of The Blue Mountains**

07	2100PST	0	0	Winter Storm
08	1000PST			

The first snow storm of the season dropped up to four inches of snow in the Pendleton area. In Hermiston freezing rain fell before and after about two inches of snow complicating driving conditions. An inch and a half of snow fell in Milton-Freewater with no freezing rain. Several flights were canceled at the Eastern Oregon Regional Airport in Pendleton because of the snow and freezing rain. A school bus slid into a power pole. None of the 35 students on the bus were injured and they walked the rest of the way to school.

**ORZ019** **Northeast Oregon**

12	0900PST	0	1	Fog
13	1600PST			

Freezing fog along I-84 caused at least three semi-trucks to jack-knife on Cabbage Hill east of Pendleton. One driver was treated for a head wound and released.

**ORZ019** **Northeast Oregon**

20	0515PST	0	0	High Wind (G50)
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An automated wind sensor at the La Grande airport reported a non-thunderstorm wind gust to 58 mph.

**ORZ019** **Northeast Oregon**

24	0800PST	0	4	Fog
25	2000PST			

Fog and ice caused at least 5 traffic accidents on Interstate 84 between between milepost 223 and 229. On Christmas Eve a car ran into the back of a parked semi-truck. The four occupants of the car were treated for minor injuries and released. On Christmas day at least four cars slid off the road and crashed into snow banks. No one was injured.

**ORZ016** **Lower Columbia Basin**

24	0800PST 1800PST	0	0	Fog
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Fog caused several minor traffic accidents near Stanfield and Hermiston.

**ORZ017** **Foothills Of The Blue Mountains**

31	0600PST 1430PST	0	0	Fog
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Fog shrouded the Eastern Oregon Regional Airport causing flights to be canceled.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property		

December 1997

## OREGON, Northwest

### ORZ001>002

#### Northern Coast - Central Coast

15 1600PST 0 0 High Wind (G90)  
16 1500PST

The last major storm of 1997 brought high winds to the Northern and Central Oregon coast. Maximum reported wind speeds included sustained 58 mph gusting to 78 mph at Florence and sustained 58 mph gusting to 70 mph at Sea Lion Caves, both in Lane county, gusts to 70 mph at Netarts and 69 mph at Garibaldi in Tillamook county, sustained 54 mph gusting to 66 mph at Newport in Lincoln county, and a gust to 65 mph at Cannon Beach in Clatsop county.

### ORZ001

#### Northern Coast

22 2000PST 0 0 Heavy Snow  
23 0130PST

A weak Pacific storm dumped three inches of snow on Wilson river and Sunset summit passes in the Coast Range before the snow turned to rain.

## OREGON, Southeast

### ORZ020

#### Baker

07 2100PST 0 0 Heavy Snow  
08 0700PST

A winter storm produced 5 inches of new snow at Sumpter and Unity, Oregon.

### ORZ020

#### Baker

15 2100PST 0 0 Heavy Snow  
16 0700PST

During the night of December 15-16, 5 inches of new snow fell at Sumpter, Oregon.

## OREGON, Southwest

### ORZ003

#### Southern Coast

22 0600PST 0 0 Fog  
1100PST

FREEZING FOG AND ICY ROADS RESULTED IN A 4 CAR PILEUP AND SEVERAL INJURIES IN COOS COUNTY

### ORZ012

#### Southern Cascades And Siskiyou Mountains

23 1800PST 0 5 Heavy Snow  
2300PST

SNOW ON SISKIYOU SUMMIT (4300 FEET) RESULTED IN AT LEAST 8 ACCIDENTS AND SEVERAL INJURIES

### ORZ008

#### Rogue Basin

26 0500PST 0 3 Fog  
0900PST

FREEZING FOG AND ICY SPOTS ON I-5 RESULTED IN 3 INJURIES JUST NORTH OF ASHLAND

## PACIFIC

### Marshall Islands

Mili to  
Ujelang

09 1000HST 0 0 80M Typhoon  
13 1000HST

Breadfruit, Pandanus, Banana, Papaya, Coconut and Lime trees were damaged or knocked down

### Guam

Andersen Afb

15 1700HST 0 2 500M Typhoon  
16 1200HST

Banana, Papaya, coconut trees, betel nut and vegetable crops damaged or destroyed

### Rota

Songsong

15 1700HST 0 0 4.4M Typhoon  
16 1700HST

Typhoon Paka formed in the central Pacific southwest of the Hawaiian Islands on November 28 1997. Paka tracked steadily westward and moved into the Guam National Weather Service Forecast Office area of responsibility as it crossed the International Dateline. This occurred shortly after 1200 LST on December 7 1997. Paka entered the Marshall Islands as a tropical storm on December 10. It became a typhoon on the morning of December 11. As a typhoon it continued to cross through the Marshall Islands until December 14. The path of the storm through the Marshall Islands was roughly from between Mili and Majuro continuing to between Jaluit and Ailinglapalap to south of Ujelang. In addition to these islands mentioned a number of smaller islands and atolls were also affected. Residence dwellings, cook and bath houses, water catchments, schools, copra storage buildings, a church building and one health dispensary building were damaged. Crops were also damaged with numerous Breadfruit, Pandanus, Banana, Papaya, Coconut and Lime trees damaged or knocked down. No deaths or injuries were reported in the Marshall Islands. An estimated \$80 million worth of damage was done in the Marshall Islands.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## PACIFIC

Typhoon Paka continued to move west-northwest and the islands of Guam, Rota, Tinian and Saipan were put into a typhoon watch at 1700 LST on December 14 1997. This was upgraded to a typhoon warning at 930 LST on December 15. At this time the typhoon was upgraded to a Super Typhoon (winds equal to or greater than 150 mph). The typhoon passed 5 miles north of Guam as it moved through the Rota Channel with winds estimated at 150 mph with gust to 185 mph near the center of the storm.

Destructive winds and heavy rain began to move onto Guam during the early afternoon of December 16 1997. These destructive winds continued into the morning of December 17. the lowest pressure observed on Guam was 948 mb and the highest winds were 115 mph with gust to 175 mph before the wind recording instrument failed. On Guam no deaths were directly attributed to the storm, although at least two people were injured. 1160 single family houses were destroyed and 60 percent of the homes on the island received major damage. 30 to 40 percent of the public buildings received major damage. A 100 percent power outage followed the storm. There was an estimated \$16 million dollar damaged worth of damage to the main electrical transmission and distribution system. During some period of the time 25 percent of the homes were without water. The Won Pat International Airport was closed, except for emergency flights only. An estimated \$500 million worth of damaged occurred on Guam.

The highest winds recorded on Rota were 90 mph with gust to 115 mph. No deaths or injuries was reported on Rota. An estimated \$4.4 million worth of damage was done to public structures.

Typhoon Paka was an average sized storm with a diameter of about 280 statute miles. From the time were the storm developed until the time it became extra-tropical the storm traveled 4500 statute miles, with 3450 miles in the Guam Forecast Office area of responsibility.

## PENNSYLVANIA, Central

**PAZ024**

**Cambria**

**06 2300EST**

**0**

**0**

**Heavy Snow**

**PAZ004**

**Warren**

**07 0300EST**

**0**

**0**

**Heavy Snow**

**PAZ033**

**Somerset**

**07 0500EST**

**0**

**0**

**Heavy Snow**

Heavy snow fell across the higher elevations of Cambria and Somerset counties from late afternoon of the 6th until before sunrise on the 7th. Up to 7 inches fell in the Ebensburg area by late evening with 5 to 7 inches falling near Somerset by sunrise.

**PAZ005**

**Mckean**

**07 0600EST**

**0**

**0**

**Heavy Snow**

Lake effect snow fell overnight of December 6th across the northern mountains of western Pennsylvania. Up to 10 inches accumulated in western Warren County by mid-morning on the 7th, with around 6 inches in western parts of McKean County.

**PAZ004>006-  
010>011-037-  
041>042**

**Warren - McKean - Potter - Elk - Cameron - Tioga - Northern Lycoming - Sullivan**

**10 1400EST**

**0**

**0**

**Heavy Snow**

Heavy wet snow fell across the northern mountains of central Pennsylvania. Snow began falling around sunrise and accumulated from 4 to 7 inches of heavy, slushy, wet snow by mid-afternoon. There were many auto accidents through the late morning as roads became slippery and visibilities dropped to near zero. Elevation was critical for snowfall amounts with many valley communities in the region receiving only an inch or two. Some of the higher accumulations included Wellsboro and Coudersport with close to 7 inches, Bradford with 6 inches, Grand Valley with 6 inches, and Laporte with 6 inches. South of the area, 2 to 3 inches fell across central Pennsylvania.

**PAZ006-011>012-  
018>019-024-  
026>028-033-  
035>037-041>042-  
045>046-049>053-  
058**

**Potter - Cameron - Northern Clinton - Northern Centre - Southern Centre - Cambria - Huntingdon - Mifflin - Juniata - Somerset - Fulton - Franklin - Tioga - Northern Lycoming - Sullivan - Southern Clinton - Southern Lycoming - Union - Snyder - Montour - Northumberland - Columbia - Schuylkill**

**29 2200EST**

**0**

**0**

**Heavy Snow**

**30 2200EST**

Low pressure moved northeast from the Carolinas across New York City and brought heavy snow to a broad area of central Pennsylvania from late on the 29th through the 30th. Snow fell heavily from Franklin County northward into New York State. Snowfall amounts ranged from 8 to 14 inches across most of the region. Amounts were much lighter over the northwest where only an inch or two fell. An oddity with this particular storm was the way the heavy snow skipped over the Bedford to Port Matilda valley. Only two to four inches fell in this region with heavier snow to the west and to the east.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## PENNSYLVANIA, Central

### PAZ004

#### Warren

30 2300EST

0 0

Heavy Snow

Lake effect snow fell across Warren County from the afternoon of the 30th into the early morning of the 31st. Up to 10 inches was reported near Lottsville in the northwest part of the county with 4 to 5 inches in Russell and Garland.

## PENNSYLVANIA, East

### PAZ060>062-069

#### Berks - Lehigh - Northampton - Bucks

10 0900EST

0 0

0 Winty Mix

11 0800EST

### PAZ054>055

#### Carbon - Monroe

10 1000EST

0 0

0 Heavy Snow

11 0800EST

A low pressure system that moved through the Delmarva Peninsula coastal waters brought a winty mix of precipitation across the Lehigh Valley, extreme Northern Bucks County and Berks County and heavy snow to the Poconos. Snow began across the region during the morning on the 10th. Enough warm air at higher levels of the atmosphere moved into Berks County, extreme Northern Bucks County and the Lehigh Valley for precipitation to change over to a rain and freezing rain mixture from the late afternoon through the evening on the 10th. Precipitation though remained mainly snow in the Poconos. The heaviest precipitation was over by midnight on the 10th, but lighter snow and/or flurries lingered until around sunrise on the 11th.

Snowfall accumulations averaged around 6 inches in the Poconos with lighter accumulations across the Lehigh Valley and extreme Northern Bucks County (about 1 to 3 inches) and Berks County (generally less than one inch). The winty precipitation caused accidents throughout the area, but the worst ones occurred around school dismissal time in Berks County. In Exeter Township, a car skidded head-on into a school bus and injured two children. In Leesport Township, another vehicle skidded into a school bus after trying to make a right hand turn. No injuries were reported with the second accident.

Specific accumulations included 7.5 inches in Tobyhanna (Monroe County), 7 inches in Long Pond (Monroe County), 6 inches in Jim Thorpe (Carbon County) and Stroudsburg (Monroe County), 5 inches in Lehighton (Carbon County), 2.5 inches in Springtown (Bucks County), and 1 inch at the Lehigh Valley International Airport.

### PAZ054>055- 061>062-069

#### Carbon - Monroe - Lehigh - Northampton - Bucks

22 1300EST

0 0

0 Winter Storm

23 0500EST

### PAZ060-067>068

#### Berks - Chester - Montgomery

22 1300EST

0 0

0 Freezing Rain

23 0100EST

A high pressure system moved across the Middle Atlantic and New England States on the 21st and 22nd. It brought dry and cold air into the region. Early Monday morning (the 22nd) a secondary low pressure system was developing off the South Carolina Coast as its primary system was weakening in the Tennessee Valley. The South Carolina low intensified and moved quickly up the Eastern Seaboard and was just south of Long Island at 7 a.m. EST on the 23rd. While warmer air arrived across Eastern Pennsylvania above the ground, the low moved too quickly (coupled with a land-based northeast flow trajectory) to permit surface temperatures to get above freezing. This was especially true in the Poconos and the Lehigh Valley. Precipitation started briefly as light snow and sleet the afternoon of the 22nd, but once it intensified during the night time hours of the 22nd and 23rd, it fell mainly as freezing rain. Temperatures did slowly rise overnight and most locations in Berks County and the northwest Philadelphia Suburbs were above freezing by the morning of the 23rd.

An inch or less of snow fell across the area and between a quarter to a half an inch of ice accrued on exposed surfaces. Driving was hazardous on untreated roadways and the freezing rain contributed to one traffic fatality in the Lehigh Valley. Numerous accidents were reported in Middle and Upper Bucks County and the Lehigh Valley. In Lehigh County, a 30-year-old woman passenger was killed in Upper Macungie Township when the minivan she was riding in struck a sound barrier on westbound Interstate 78 at 750 p.m. EST on the 22nd. Another serious accident also occurred in Whitehall Township. In Northampton County, a rash of accidents were reported. Numerous fender benders occurred during the evening rush hour. In Palmer Township alone 11 accidents occurred in a one hour span between 630 p.m. and 730 p.m. EST. The State Police in Bethlehem responded to 17 accidents between 4 p.m. and 10 p.m. EST. Plainfield Township was forced to close a roadway because of the ice and accidents. In Bucks County, the night was described as "nasty" across the middle and upper sections of the county. Pennsylvania State Route 309 was closed for a while. Numerous accidents were reported in Buckingham, Plumstead (where a vehicle went off a cliff into a quarry) and Sellersville.

### PAZ054>055

#### Carbon - Monroe

24 2200EST

0 0

0 Freezing Rain

25 0100EST

A low pressure system developed over southern Texas the morning of the 23rd and moved northeast and reached southern Missouri the morning of the 24th and extreme southwest Ontario the morning of the 25th. A second low pressure system did form

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## **PENNSYLVANIA, East**

along the Delmarva Peninsula and was near the New Jersey Coast on the morning of the 25th. This second low stalled the southerly flow of warm air enough to have precipitation to start briefly as freezing rain in a few of the deeper valleys in the Poconos.

### **PAZ067>069**

#### **Chester - Montgomery - Bucks**

<b>27</b>	<b>0800EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Snow</b>
	<b>2300EST</b>				

A low pressure system developed over the South Carolina coastal waters the night of the 26th and move rapidly northeast and farther offshore during the 27th. This low spread a swath of light snow across Southeastern Pennsylvania. Snow began falling during the morning on the 27th and ended before midnight in all areas. The snow was mixed with rain at times in and around Philadelphia. The unseasonably warm weather during December limited snowfall accumulations to grassy areas during the daylight hours, although snow did start to stick to all surfaces the evening of the 27th. Accumulations averaged 1 to 3 inches in Bucks, Chester and Montgomery Counties and generally an inch or less in Delaware and Philadelphia Counties. Skies cleared toward the morning of the 28th and untreated roads were slippery. Accumulations included 3.0 inches in Perkasio (Bucks County), 2.8 inches in Glenmoore (Chester County) and 2.0 inches in Palm (Montgomery County).

### **PAZ054>055**

#### **Carbon - Monroe**

<b>29</b>	<b>1700EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
<b>30</b>	<b>1400EST</b>				

### **PAZ061>062**

#### **Lehigh - Northampton**

<b>29</b>	<b>1700EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Wintry Mix</b>
<b>30</b>	<b>1200EST</b>				

A low pressure system formed to the lee of the Southern Rockies the morning of December 28th and moved east into the Tennessee Valley the morning of the 29th. A second low pressure system formed along the South Carolina Coast the morning of the 29th and intensified rapidly as it moved northward and became the main low pressure system. The low moved inland along the New Jersey shore the night of the 29th and by 7 a.m. EST on the 30th it was located in southern Vermont.

The Poconos were far enough to the west of the low pressure system's storm track for precipitation to fall as heavy snow and sleet. Even in the Poconos, accumulations were elevation dependent as some rain mixed in during the evening of the 29th in the valleys. Across the Lehigh Valley, precipitation started as rain around sunset on the 29th and as colder air started to flow into the region, the precipitation began mixing with sleet before midnight and changed over to sleet and snow during the early morning on the 30th. Accumulations in the Poconos ranged from around 4 inches in the valleys to over one foot over the higher terrain. Accumulations in the Lehigh Valley were generally between 1 and 4 inches.

The heavy snow in the Poconos combined with wind gusts between 20 and 30 mph brought down some trees and power lines and caused numerous accidents. About 5,700 homes lost power during the evening of the 29th and 700 were still without power the evening of the 30th. Snowfall accumulations included 16 inches in Long Pond (Monroe County), 12 inches in Swiftwater (Monroe County), 11.5 inches in Pocono Lake (Monroe County), 4 inches in Lehighton (Carbon County) and an estimated 2.5 inches at the Lehigh Valley International Airport.

### **Bucks County**

#### **Countywide**

<b>29</b>	<b>1800EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
<b>30</b>	<b>0200EST</b>				

A low pressure system formed to the lee of the Southern Rockies the morning of December 28th and moved east into the Tennessee Valley the morning of the 29th. A second low pressure system formed along the South Carolina Coast the morning of the 29th and intensified rapidly as it moved northward and became the main low pressure system. The low moved inland along the New Jersey shore the night of the 29th. By 7 a.m. EST on the 30th it was located in southern Vermont.

This low pressure system brought heavy rain as far west as Bucks County in Southeast Pennsylvania. Most of it fell during the evening. While the heavy rain did not push any major creeks or streams out of their banks, it did cause the usual poor drainage flooding in low-lying areas. Storm totals in the county averaged around 1.25 inches. Individual reports included 1.3 inches in New Hope and 1.24 inches in Neshaminy Falls. Storm totals throughout the rest of the Pennsylvania side of the Philadelphia Metropolitan Area (including the city itself) were generally under an inch.



# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage		

December 1997

## PENNSYLVANIA, Northeast

### PAZ038>040-043 Bradford - Susquehanna - Wayne - Wyoming

10	1100EST	0	0	Heavy Snow
11	0300EST			

A complex storm system, with one center in the Ohio Valley and another off the mid-atlantic coast, brought a round of heavy wet snow to the northern tier of eastern Pennsylvania. Heavy snow began falling during the late morning hours of the 10th in areas north and west of Scranton, then spread eastward to the northern Poconos by mid afternoon. Significant snow persisted well into the evening before mixing with sleet, freezing rain, and rain and also tapering off.

For the most part, snowfall totals for this event ranged from 5 to 9 inches. Some isolated 10 inch amounts occurred across the higher terrain of Wyoming, Susquehanna, and northern Wayne counties. Some of the greater totals included Ledgesdale and Equinunk in Wayne county - 10 inches, and Great Bend in Susquehanna county - 9 inches.

### PAZ038>040-043>044-047>048 Bradford - Susquehanna - Wayne - Wyoming - Lackawanna - Luzerne - Pike

29	1700EST	0	0	Heavy Snow
30	1300EST			

A storm system rapidly intensified off the New Jersey coast during the evening of the 29th, then moved very slowly northward overnight and during the day on the 30th. This system threw substantial atlantic moisture inland over a cold air mass in place across northeastern Pennsylvania. This resulted in a period of intense snowfall from late at night on the 29th until midday on the 30th.

In general, event totals ranged from 6 to 14 inches across northeastern Pennsylvania. The highest amounts were found over Bradford county and also across the ridge tops in Pike and northern Wayne counties. Some specific amounts included Sylvania in Bradford county - 14 inches, Troy and Canton in Bradford county - 12 inches, Equinunk in Wayne county - 11 inches, and Bushkill in Pike county - 11 inches.

## PENNSYLVANIA, Northwest

### PAZ001>003 Northern Erie - Southern Erie - Crawford

05	0200EST	0	0	225K	Heavy Snow
07	1900EST				

A prolonged period of lake effect snow began during the early morning hours on the 5th and continued through the early morning hours on the 7th. A predominantly west wind brought persistent squalls across northwest Pennsylvania. Some total storm amounts were 40 inches at Franklin Center, 36 inches in Amity Township and as much as 32 inches near the city of Erie (all in Erie County). In Crawford County, there were 15 inches in Spartansburg and 21 inches at Cambridge Springs.

### PAZ002 Southern Erie

10	1300EST	0	0	Heavy Snow
	1900EST			

Temperatures in the mid 30s caused a mix of precipitation, with snow, sleet and freezing rain changing to mainly snow during the afternoon as temperatures dipped slightly. Total snow accumulations averaged around four inches, with a maximum of nine inches in Union City.

### PAZ002>003 Southern Erie - Crawford

30	0800EST	0	0	Heavy Snow
31	1900EST			

Lake effect snow developed after the passage of an arctic cold front. The short fetch northwest flow kept amounts relatively light considering the long duration. Average snowfall amounts were six to eight inches, with higher amounts of 13 inches in Union City, and 19 inches in Amity Township (Southern Erie County).

## PENNSYLVANIA, West

### PAZ016-023-030-032 Jefferson - Indiana - Westmoreland - Fayette

29	1200EST	0	0	Heavy Snow
30	0500EST			

Between 3 and 6 inches of snow fell across the county. Close to 6 inches was reported in Richardsville.

A storm system moved from the gulf coast states slowly north along the eastern seaboard and intensified. Heavy snow fell across parts of southwest Pennsylvania. The heaviest snow was confined to the Laurel and Chestnut Ridges.

## PUERTO RICO

### PRZ001>007

#### Aguadilla

01	0000AST	0	0	Dry Spell
31	0000AST			

December was a very dry month. Only 1.02 inches of rain were recorded at San Juan making this the second driest December on record. New record high temperatures for the day in San Juan were established on the 2nd, 15th, and 30th. Island wide the rainfall

# Storm Data and Unusual Weather Phenomena

December 1997

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## PUERTO RICO

average was 1.24 inches. This represent three inches below normal and the lowest rainfall average for the month of December since 1963. The major weather system responsible for this dry and warm weather was a nearly stationary high pressure system that prevented the arrival of cold fronts to our area.

## RHODE ISLAND

**RIZ001>007**

**Northwest Providence - Southeast Providence - Western Kent - Eastern Kent - Bristol - Washington - Newport**

<b>02</b>	<b>0200EST</b>	<b>0</b>	<b>0</b>	<b>Strong Winds</b>
	<b>2200EST</b>			

A strong storm system that was nearly stationary just east of Nova Scotia combined with high pressure building in from the west to cause strong northwest winds across the state. Wind gusts to 40 to 50 mph were reported.

**RIZ001>007**

**Northwest Providence - Southeast Providence - Western Kent - Eastern Kent - Bristol - Washington - Newport**

<b>14</b>	<b>1100EST</b>	<b>0</b>	<b>0</b>	<b>Strong Winds</b>
	<b>1700EST</b>			

Strong northwest winds accompanied the arrival of an Arctic airmass. Wind gusts to 40 to 55 mph were reported across most of Rhode Island. A peak gust to 51 mph was recorded at Tiverton while a peak gust to 45 mph occurred at Providence.

**RIZ001**

**Northwest Providence**

<b>23</b>	<b>0900EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
	<b>1500EST</b>			

A low pressure system developing off the Delaware coast moved to the northeast and intensified rapidly, passing southeast of Cape Cod. This storm brought a surprise heavy snowfall to northern Rhode Island. Heavy snowfall was a surprise to everyone including weather forecasters. Despite some slick driving and early school dismissals, there was little disruption to many local communities. However, in the Woonsocket-Cumberland area there were dozens of auto accidents.

The maximum snowfall total was 14 inches at Burrillville in the northwest corner of the state. Other totals included: Cumberland, 7.8 inches; Woonsocket, 7.5 inches; and North Foster, 6 inches. The rest of the state had 1 to 4 inches, except less than an inch fell along the coast.

**RIZ006>007**

**Washington - Newport**

<b>29</b>	<b>1900EST</b>	<b>0</b>	<b>0</b>	<b>Strong Winds</b>
<b>30</b>	<b>1500EST</b>			

An intense low pressure system passed to the west of New England, moving north through the Hudson Valley in New York state. This storm produced strong southeast to south-southwest winds across most of the state and near-record low barometric pressure for the month of December. The lowest pressure readings were around 28.90 inches. Wind gusts generally were in the range of 40 to 55 mph along the south coast. A couple of wind gusts reported included: Newport, 52 mph (with sustained winds in the 30 to 40 mph range) and Warwick, 43 mph. The strong onshore winds resulted in minor coastal flooding, with the tide running 3.4 feet above normal at the Fox Point Hurricane Barrier in Providence.

## SOUTH CAROLINA, Central

NONE REPORTED.

## SOUTH CAROLINA, North Coastal

NONE REPORTED.

## SOUTH CAROLINA, Northwest

**SCZ001>003**

**Northern Oconee - Northern Pickens - Northern Greenville**

<b>08</b>	<b>1100EST</b>	<b>0</b>	<b>0</b>	<b>Wintry Mix</b>
<b>09</b>	<b>0400EST</b>			

A light wintry mix of mainly sleet and freezing rain, with some snow, spread east across the mountains of South Carolina, producing a thin coating of ice.

**Greenwood County**

**Countywide**

<b>24</b>	<b>1800EST</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
	<b>2100EST</b>			

A prolonged soaking rain of 2-3 inches caused many small streams to rise briefly out of their banks.

**SCZ001>006-**

**008>010-012>014**

**Northern Oconee - Northern Pickens - Northern Greenville - Southern Oconee - Southern Pickens - Southern Greenville - Cherokee - York - Anderson - Laurens - Union - Chester**

<b>29</b>	<b>0530EST</b>	<b>0</b>	<b>0</b>	<b>Snow</b>
	<b>1500EST</b>			

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage Crops	Character of Storm
<b><u>SOUTH CAROLINA, Northwest</u></b>									
<b>SCZ007</b>		<b>Spartanburg</b>							
	<b>29</b>	<b>0530EST 1500EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
Snow spread across the Upstate during the day, accumulating 1-2 inches in the mountains and 1-3 inches across the foothills and piedmont. The one exception being, the northern half of Spartanburg county where up to 6 inches of snow fell. Hundreds of traffic accidents occurred as roads became very slick, resulting in numerous injuries. One woman died (indirect) in a weather related car accident in Rock Hill. Scattered power outages occurred as well.									
<b>SCZ001&gt;006-010</b>		<b>Northern Oconee - Northern Pickens - Northern Greenville - Southern Oconee - Southern Pickens - Southern Greenville - Anderson</b>							
	<b>30</b>	<b>1700EST</b>			<b>0</b>	<b>0</b>			<b>Snow</b>
	<b>31</b>	<b>0100EST</b>							
Another batch of light snow, associated with a strong upper level disturbance in the wake of the strong storm the previous day, fell across the northwestern section of the Upstate. Accumulations were generally 1-2 inches in the mountains and around 1 inch in the foothills. Inconveniences were minor as roads only became slick for a short time during the evening.									
<b><u>SOUTH CAROLINA, South Coastal</u></b>									
NONE REPORTED.									
<b><u>SOUTH DAKOTA, Central and North</u></b>									
NONE REPORTED.									
<b><u>SOUTH DAKOTA, Southeast</u></b>									
<b>SDZ038-052&gt;053-057&gt;059</b>		<b>Beadle - Jerauld - Sanborn - Brule - Aurora - Davison</b>							
	<b>30</b>	<b>0600CST 0900CST</b>			<b>0</b>	<b>0</b>	<b>13K</b>		<b>High Wind (G50)</b>
High winds destroyed a nearly completed garage under construction near Huron, and blew down signs and caused other minor damage at Mitchell.									
<b><u>SOUTH DAKOTA, West</u></b>									
<b>SDZ024</b>		<b>Northern Black Hills</b>							
	<b>10</b>	<b>0100MST 1400MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
An upslope snow event resulted in snowfall amounts of 6 inches in the northern Black Hills.									
<b>SDZ001&gt;002-012&gt;014-025&gt;027-029&gt;032-041&gt;044-046&gt;047-049</b>		<b>Harding - Perkins - Butte - Meade Co. Plains - Ziebach - Northern Foot Hills - Central Foot Hills - Southern Foot Hills - Southern Black Hills - Custer Plains - Pennington Plains - Haakon - Fall River Co. - Shannon - Jackson - Bennett - Mellette - Todd - Tripp</b>							
	<b>27</b>	<b>1300MST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>28</b>	<b>0230MST</b>							
<b>SDZ024-028</b>		<b>Northern Black Hills - Central Black Hills</b>							
	<b>27</b>	<b>1300MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>28</b>	<b>0430MST</b>							
A strong low pressure system moved through the Northern Plains resulting in snow, very gusty winds, and below zero wind chills. The areas hit hardest by the storm were the northern and central Black Hills. Snow amounts in these areas ranged from four to eight inches. Elsewhere snow amounts were one to two inches, but combined with wind gusts over 50 mph visibilities were occasionally reduced to less than one half mile.									
<b>SDZ024-028</b>		<b>Northern Black Hills - Central Black Hills</b>							
	<b>29</b>	<b>1800MST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>30</b>	<b>0500MST</b>							
An upper level disturbance moved over the central and northern Black Hills and produced upslope freezing rain and snow, below zero wind chills, and strong winds. Snow amounts were six to eight inches. Northwest winds of 15 to 30 mph resulted in below zero wind chills and blowing snow reducing visibilities to less than one half mile.									

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## TENNESSEE, Central

**TNZ022-025-057-094 Benton - Dickson - Hickman - Lawrence**

29 0000CST 1200CST 0 0 20K Heavy Snow

A newspaper article reported 4 to 5 inches of snow at Big Sandy. A 17 year old male juvenile lost control of his vehicle on the slick roads. The vehicle slid off the road, hit a culvert, spun around and struck a tree before coming to rest at a ditch. The boy was not injured. The wet and heavy snow caused some tree limbs to fall on power lines. At one point there were 2000 customers without power.

The snow depths for a 12 hour period from 12 AM Monday, December 29 to 12 PM Monday, December 29 was as follows: 4-5 inches for Lawrence and Dickson counties...3-4 inches for Putnam county and 2-4 inches for Humphreys county. 5 inches of snow fell at Bon Aqua in Hickman county, even though most of the county had 2 inches of snow.

## TENNESSEE, East

**TNZ012>018-034>047-066>074-083>087-099>102 Scott - Campbell - Claiborne - Hancock - Hawkins - Sullivan - Johnson - Fentress - Morgan - Anderson - Union - Grainger - Hamblen - Northwest Cocke - Cocke/Smoky Mountains - Northwest Greene - Southeast Greene - Washington - Unicoi - Northwest Carter - Southeast Carter - Cumberland - Roane - Loudon - Knox - Jefferson - Northwest Blount - Blount/Smoky Mountains - North Sevier - Sevier/Smoky Mountains - Rhea - Meigs - McMinn - Northwest Monroe - Southeast Monroe - Hamilton - Bradley - West Polk - East Polk**

30 0400EST 0 0 Winter Storm  
31 1100EST

A series of fast-moving upper level disturbances caused heavy snow shower activity across East Tennessee. Amounts were generally 2" to 5", with locally higher amounts in higher elevations.

## TENNESSEE, West

**TNZ003>004-019>021-052-054 Weakley - Henry - Dyer - Gibson - Carroll - Madison - Henderson**

29 0300CST 1800CST 0 0 0 Heavy Snow

Heavy snow fell across parts of West Tennessee with 2 to 4 inches of accumulation occurring over portions of Dyer, Weakley, Henry, Gibson, Carroll, Henderson and Madison counties.

## TEXAS, Central

**TXZ049-053>054-098>099-113>114-127>128 Fisher - Mitchell - Nolan - Haskell - Throckmorton - Jones - Shackelford - Taylor - Callahan**

26 0100CST 1000CST 0 0 Winter Storm

A winter storm dropped 2 to 5 inches of snow across the Big Country.

## TEXAS, Central Southeast

### **Harris County**

**Pasadena to Baytown 03 0330CST 0345CST 0 0 30K Thunderstorm Wind**

Strong storm moved west to east across the area producing wind damage in its path. Tree fell onto a house roof and a carport was downed on a car in Pasadena. Road signs bent along HWY 225 in La Porte. Powerlines blown down in Deer Park. Trees blown down in Baytown.

### **Chambers County**

**Anahuac 03 0408CST 0417CST 0 0 75K Thunderstorm Wind (G80)**

90 mph wind recorded at Chambers Co Airport. One aircraft destroyed. Damage to a high school roof, mobile home roof lifted, garage destroyed, powerlines down, and damage to a Putt-Putt golf course.

### **Harris County**

**Highlands 07 2015CST 0 0 15K Thunderstorm Wind**  
Numerous trees and powerlines blown down. Structural damage mainly to roofs.

### **Harris County**

**Sheldon 07 2015CST 0 0 5K Thunderstorm Wind**  
Trees and powerlines blown down.

# Storm Data and Unusual Weather Phenomena

December 1997									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
TEXAS, Central Southeast									
Chambers County									
Oak Island	07	2055CST			0	0	3K		Thunderstorm Wind
		Powerlines blown down.							
Chambers County									
Anahuac	07	2105CST			0	0	3K		Thunderstorm Wind
		Powerlines blown down.							
Galveston County									
Dickinson	07	2125CST			0	0	5K		Hail (1.25)
Galveston County									
Dickinson	07	2125CST			0	0	3K		Thunderstorm Wind
		Powerlines blown down.							
Galveston County									
Dickinson	07	2130CST 2220CST			0	0	2K		Flash Flood
		High water along FM 517 & I-45.							
Galveston County									
Gilchrist	07	2140CST			0	0	40K		Thunderstorm Wind
		30+ powerlines and powerpoles blown down along a 1.5 mile stretch. Meacoms Pier sustained extensive structural damage.							
Galveston County									
Central Portion	08	0045CST 0115CST			0	0	3K		Flash Flood
		High water on feeder roads.							
TXZ213									
		Harris							
	12	1630CST			1	0			Extreme Cold
		Homeless man, 35, died of hypothermia. M35OU							
Harris County									
Countywide	20	1916CST 2200CST			0	0	20K		Flash Flood
		Street flooding in Humble. Magnolia Bar & Grill (SW Houston) roof collapsed due to heavy rain.							
Liberty County									
Countywide	20 21	2045CST 0200CST			0	0	5K		Flash Flood
		Widespread street flooding.							
Montgomery County									
Countywide	20	2245CST			0	0	5K		Flash Flood
		Widespread street flooding, especially Roman Forest Rd & HWY 59.							
San Jacinto County									
Shepherd	20	2252CST 2350CST			0	0	3K		Flash Flood
		High water on Loop 424.							
Colorado County									
Weimar	23	1527CST			0	0	2K		Thunderstorm Wind (G52)
		Spotter reported 60 mph winds.							
Colorado County									
Weimar to Eagle Lake	23	1532CST 1550CST			0	0	10K		Thunderstorm Wind
		Trees, sheds, and powerlines blown down across the county (Weimar, Columbus, Eagle Lake).							
Austin County									
New Ulm	23	1558CST			0	0	3K		Thunderstorm Wind
		Trees blown down along FM 109.							

## Storm Data and Unusual Weather Phenomena

December 1997									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
TEXAS, Central Southeast									
Washington County									
Brenham	23	1610CST			0	0	3K		Thunderstorm Wind
Trees blown down.									
Grimes County									
Navasota	23	1620CST			0	0	10K		Hail (1.75)
Grimes County									
Navasota	23	1620CST			0	0	3K		Thunderstorm Wind (G52)
Spotter reported 60 mph winds.									
Wharton County									
Pierce	23	1638CST			0	0	3K		Thunderstorm Wind (G50)
Waller County									
Brookshire	23	1641CST			0	0	3K		Thunderstorm Wind
Trees blown down.									
Wharton County									
2 NE Hungerford	23	1645CST			0	0	5K		Thunderstorm Wind
Billboard blown down at CR 221 & HWY 59.									
Walker County									
New Waverly	23	1650CST			0	0	5K		Thunderstorm Wind
Trees blown onto powerlines.									
Harris County									
Houston	23	1659CST 1725CST			0	0	40K		Thunderstorm Wind
Numerous trees, powerlines and 3 billboards blown down across the western half of the Houston metropolitan area.									
Fort Bend County									
5 W Sugarland	23	1705CST			0	0	10K		Thunderstorm Wind
Numerous trees blown down and roof damage in the Cinco Ranch Subdivision.									
Brazoria County									
Pearland	23	1720CST			0	0	3K		Thunderstorm Wind
Powerlines blown down.									
Harris County									
Houston	23	1725CST 1805CST			0	0	20K		Thunderstorm Wind
Numerous trees and powerlines blown down and substantial wind damage across eastern half of the Houston metropolitan area.									
Montgomery County									
The Woodlands	23	1725CST			0	0	5K		Thunderstorm Wind
Trees blown down.									
San Jacinto County									
Coldspring	23	1740CST			0	0	5K		Thunderstorm Wind
Trees and powerlines blown down.									
Chambers County									
Mont Belvieu	23	1745CST			0	0	3K		Thunderstorm Wind
Powerlines blown down.									
Liberty County									
Cleveland	23	1810CST			0	0	5K		Thunderstorm Wind
Large trees blown onto powerlines.									
Polk County									
Onalaska	23	1810CST			0	0	5K		Thunderstorm Wind
Large trees blown onto powerlines.									

### **TEXAS, Extreme West**

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

December 1997									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
TEXAS, Mid - South									
Goliad County									
Schroeder	23	1522CST			0	0			Funnel Cloud
Sheriff report of a funnel cloud.									
Goliad County									
Goliad	23	1530CST			0	0			Hail (1.75)
NWS Spotter report of golfball sized hail.									
Goliad County									
Goliad	23	1530CST			0	0			Thunderstorm Wind (G50)
NWS Spotter report of structural damage to a chimney due to strong thunderstorm wind gust.									
Victoria County									
5 N Victoria	23	1545CST			0	0			Thunderstorm Wind (G60)
Sheriff report of an 18-wheeler truck overturned on U.S. Highway 77 by strong thunderstorm wind gust.									
Goliad County									
5 E Goliad	23	1615CST			0	0			Hail (0.75)
NWS Spotter of dime sized hail.									
TEXAS, North									
TXZ091>095-103>107-117>123-131>135-144>148-157>162-174>175									
Montague - Cooke - Grayson - Fannin - Lamar - Denton - Collin - Hunt - Delta - Hopkins - Parker - Tarrant - Dallas - Rockwall - Kaufman - Van Zandt - Rains - Hood - Somervell - Johnson - Ellis - Henderson - Bosque - Hill - Navarro - Freestone - Anderson - Coryell - Bell - McLennan - Falls - Limestone - Leon - Milam - Robertson									
20	1200CST				0	0			Excessive Rain
21	0500CST								
A strong upper level storm system and associated slow moving cold front moved into the southern plains on the 20th. Rich moisture spread across the area ahead of the low pressure system. Widespread rain and thunderstorms formed and moved repeatedly over the same locations. Rainfall amounts of two to four inches were common across the eastern two thirds of the area with isolated amounts in excess of six inches falling along a Temple-Midlothian-Bonham line. The excessive rain caused widespread flooding. Numerous cars were stranded and many homes were damaged by flood waters. Two people drown in flood waters when their automobile was washed off the road.									
This heavy rain event contributed to an unusually wet month over much of the central and eastern portions of North Texas. The Dallas/Fort Worth area experienced its third wettest December on record in 1997 and the Waco area experienced its second wettest on record. The strong El Nino that has been ongoing for months likely contributed to the unusually high precipitation.									
Ellis County									
Waxahachie	20	1625CST 2200CST			0	0			Flash Flood
Several roads across the county were reported flooded and closed.									
Ellis County									
Waxahachie	20	2000CST 2200CST			0	0			Flash Flood
Many roads across the county remained closed due to flooding. Fifteen cars were stranded in high water.									
Hill County									
Hillsboro	20	1700CST 2330CST			0	0			Flash Flood
Several roads had portions washed out and many others had high water over them.									
Bell County									
Killeen	20	1723CST 2000CST			0	0	275K		Flash Flood
Two homes were reported flooded and residents were evacuated. A business received major water damage when flood waters entered the building.									
Bell County									
Nolanville	20	1723CST 2000CST			0	0	30K		Flash Flood
A home was flooded by high water and residents were evacuated.									

# Storm Data and Unusual Weather Phenomena

December 1997

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<b><u>TEXAS, North</u></b>									
<b>Bell County</b>									
Killeen	20	1800CST 1930CST			2	1			Flash Flood
A car was washed off a road. Two people in the car drown in flood waters and the third was treated for hypothermia due to prolonged exposure to the cold water temperatures. F15VE, M17VE									
<b>Bell County</b>									
Killeen	20	2030CST 2345CST			0	0	40K		Flash Flood
Highway 190 was reported flooded. Cars were washed off the road and into the river. A mobile home was destroyed by flood waters.									
<b>McLennan County</b>									
Crawford	20	1740CST 2000CST			0	0			Flash Flood
Numerous streets were reported flooded.									
<b>McLennan County</b>									
Mc Gregor	20	1740CST 2000CST			0	0			Flash Flood
Numerous streets were reported flooded.									
<b>McLennan County</b>									
Crawford	20	2000CST 2300CST			0	0			Flash Flood
Highway 317 south of town was closed with three feet of water covering the roadway.									
<b>McLennan County</b>									
Waco	20	2000CST 2200CST			0	0			Flash Flood
Several roads were flooded and closed throughout the county.									
<b>Coryell County</b>									
Oglesby	20	1740CST 2100CST			0	0	30K		Flash Flood
A home was reported flooded by high water.									
<b>Coryell County</b>									
Gatesville	20	1930CST 2200CST			0	0			Flash Flood
Numerous roads across the county were reported flooded and closed.									
<b>Bosque County</b>									
Meridian	20	1900CST 2200CST			0	0			Flash Flood
Several roads across the county were reported flooded.									
<b>Johnson County</b>									
Venus	20	1900CST 2300CST			0	0			Flash Flood
Several roads and a bridge were closed due to flooding.									
<b>Johnson County</b>									
Alvarado	20 21	2300CST 0200CST			0	0			Flash Flood
Numerous roads across the eastern portion of the county remained closed due to high water.									
<b>Dallas County</b>									
Dallas	20	1915CST 2200CST			0	0			Flash Flood
Numerous roads in the city were reported flooded and several were subsequently closed due to high water.									
<b>Dallas County</b>									
Dallas	20	2000CST 2300CST			0	0			Flash Flood
Several cars were stranded in three to four feet of water.									



# Storm Data and Unusual Weather Phenomena

December 1997

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
<b><u>TEXAS, North</u></b>							
<b>Tarrant County</b>							
Crowley	20	1915CST 2200CST			0 0		Flash Flood
Streets were closed due to flooding.							
<b>Hunt County</b>							
2 NE Greenville	20	1940CST 2200CST			0 0	50K	Flash Flood
A temporary bridge on Highway 224 was washed out.							
<b>Collin County</b>							
Plano	20	2000CST 2230CST			0 0		Flash Flood
Several roads in and around town were reported flooded.							
<b>Hunt County</b>							
Greenville	20	2000CST 2230CST			0 0		Flash Flood
Numerous roads throughout the county were reported flooded and closed due to high water.							
<b>Falls County</b>							
Marlin	20	2040CST 2300CST			0 0		Flash Flood
Numerous roads throughout the county were reported flooded.							
<b>Falls County</b>							
Marlin	20	2040CST 2300CST			0 0		Flash Flood
Several roads in and around town were reported flooded.							
<b>Limestone County</b>							
Mexia	20	2055CST 2300CST			0 0		Flash Flood
Several roads in and around town were reported flooded.							
<b>Fannin County</b>							
Ivanhoe	20	2104CST 2330CST			0 0		Flash Flood
Highway 2225 was closed due to flooding.							
<b>Fannin County</b>							
Bonham	20 21	2300CST 0200CST			0 0	50K	Flash Flood
Several roads had portions washed away in the southern part of the county.							
<b>Rockwall County</b>							
Rockwall	20	2116CST 2300CST			0 0		Flash Flood
Several roads across the county were reported flooded and closed.							
<b>Rockwall County</b>							
Rockwall	20 21	2345CST 0130CST			0 0		Flash Flood
Several roads across the county remained closed.							
<b>Navarro County</b>							
Corsicana	20	2130CST 2330CST			0 0		Flash Flood
Numerous roads across the county were flooded.							
<b>Grayson County</b>							
4 W Howe	20	2131CST 2330CST			0 0		Flash Flood
Highway 289 was flooded at the intersection of Highway 902.							
<b>Grayson County</b>							
Sherman	20 21	2300CST 0300CST			0 0		Flash Flood
Several roads across the county were flooded.							

# Storm Data and Unusual Weather Phenomena

December 1997

December 1997									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
<b>TEXAS, North</b>									
<b>Milam County</b>									
Rockdale	20	2140CST			0	0	10K		Thunderstorm Wind
			Strong winds damaged a home.						
<b>Milam County</b>									
Cameron	20	2200CST			0	0			Flash Flood
	21	0100CST							
			Seven roads were closed in the northwest part of the county.						
<b>Coryell County</b>									
Gatesville	21	0030CST			0	0			Flash Flood
		0300CST							
			Numerous roads remained closed due to flooding.						
<b>Ellis County</b>									
Waxahachie	21	0030CST			0	0			Flash Flood
		0230CST							
			Several roads across the county remained flooded.						
<b>Hill County</b>									
Hillsboro	21	0030CST			0	0			Flash Flood
		0245CST							
			Several roads across the county remained flooded.						
<b>Hill County</b>									
Mertens	21	0030CST			0	0			Flash Flood
		0245CST							
			Five to six feet of water covered Farm-to-Market Road 380 south of town.						
<b>Johnson County</b>									
Cleburne	21	0030CST			0	0			Flash Flood
		0320CST							
			Several roads remained flooded in the eastern portion of the county.						
<b>Bell County</b>									
Belton	21	0100CST			0	0			Flash Flood
		0245CST							
			Twenty residents had to be rescued from their homes due to threatening flood waters.						
<b>Bell County</b>									
Nolanville	21	0100CST			0	0			Flash Flood
		0245CST							
			Seventy people were evacuated due to rising flood waters.						
<b>Fannin County</b>									
Bonham	21	0100CST			0	0	25K		Flash Flood
		0300CST							
			A few roads across the county were washed out.						
<b>Hunt County</b>									
Greenville	21	0100CST			0	0			Flash Flood
		0345CST							
			Several roads remained flooded across the county						
<b>Rockwall County</b>									
Rockwall	21	0100CST			0	0			Flash Flood
		0300CST							
			Several roads remained flooded across the county.						
<b>Tarrant County</b>									
Ft Worth	21	0100CST			0	0			Flash Flood
		0345CST							
			Portions of Silver Creek Road were flooded.						
<b>Palo Pinto County</b>									
Lone Camp	23	0715CST			0	0			Hail (0.75)
<b>Jack County</b>									
8 E Jacksboro	23	0745CST			0	0			Thunderstorm Wind (G61)

# Storm Data and Unusual Weather Phenomena

December 1997									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>TEXAS, North</u></b>									
<b>Tarrant County</b>									
Ft Worth	23	0745CST			0	0			Hail (0.75)
Dime size hail was reported at KNFW.									
<b>Denton County</b>									
Krum	23	0830CST			0	0			Hail (1.00)
<b>Cooke County</b>									
Lindsay	23	0840CST			0	0			Hail (0.75)
<b>Robertson County</b>									
Hammond	23	1125CST			0	0			Hail (0.88)
<b>Robertson County</b>									
Bremond	23	1130CST			0	0			Hail (0.75)
<b>Leon County</b>									
5 SE Jewett	23	1142CST			0	0			Hail (0.75)
<b>Dallas County</b>									
Dallas	23	1348CST			0	0			Hail (0.75)
<b><u>TEXAS, North Panhandle</u></b>									
TXZ014>015- 019>020	Gray - Wheeler - Donley - Collingsworth								
	20	2100CST			0	0			Ice Storm
	21	0900CST							
TXZ011>012-017	Oldham - Potter - Randall								
	21	0000CST			0	0			Heavy Snow
		1200CST							
A strong upper level storm system moved out of Old Mexico into the Texas Panhandle. Heavy snows fell across the southwest Texas Panhandle with amounts of four to five inches. Over the southeast Texas Panhandle, freezing rain accumulated on power lines and trees causing numerous power outages and downed trees across Wheeler and Donley counties.									
TXZ001>003- 006>007-011-016	Dallam - Sherman - Hansford - Hartley - Moore - Oldham - Deaf Smith								
	22	2100CST			0	0			Heavy Snow
	23	0900CST							
A strong upper level storm system moved out of southern New Mexico into the Texas Panhandle and produced heavy snow across the western and northern Texas Panhandle. The heaviest snow fell in Dallam and Hartley counties where ten to fourteen inches of snow fell across the extreme western sections of these counties. Other areas received from six to ten inches of snow. Drifts of two to three feet were reported in Oldham county.									
TXZ004>005- 008>010-014	Ochiltree - Lipscomb - Hutchinson - Roberts - Hemphill - Gray								
	23	1800CST			0	0	50K		Heavy Snow
	24	0600CST							
The weight of the heavy snow caused a metal awning to collapse at a car dealership in Perryton, Texas damaging fourteen cars. The strong upper level storm system moved out of the Texas Panhandle and produced from six to ten inches of snow across the northeast Texas Panhandle.									
<b><u>TEXAS, Northeast</u></b>									
NONE REPORTED.									
<b><u>TEXAS, South</u></b>									
NONE REPORTED.									
<b><u>TEXAS, South Central</u></b>									
<b>Burnet County</b>									
Countywide	20	1530CST 2000CST			0	0	20K	0	Flash Flood
General 3 inch rainfall over Burnet County, with up to 5 inches in the Watson area, caused flash flooding through the late morning hours and into the early afternoon.									

# Storm Data and Unusual Weather Phenomena

December 1997									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
TEXAS, South Central									
Atascosa County									
Charlotte	20	1800CST 1805CST			0	0	0	0	Hail (0.75)
Williamson County									
Countywide	20	2000CST			0	0	0	0	Flash Flood
Over 3 inches of rain fell in just under two hours between Andice and Florence, producing brief flash flooding along Berry Creek in the northwestern part of Williamson County.									
Travis County									
Countywide	20	2045CST			1	0	50K	0	Flash Flood
General 2 inch rainfall with isolated totals to nearly 5 inches caused brief flash flooding over the western part of Travis County, as reported by the Austin Fire Department. Nearly 3 inches of the rainfall came in less than 3 hours. A 45-year old man was found drowned in Waller Creek near 2300CST, near the confluence with Town Lake. He was believed to be a transient in the area and the circumstances surrounding his death were not clear. M45OT									
Bandera County									
Tarpley	23	1338CST 1340CST			0	0	0	0	Hail (0.75)
Bandera County									
Bandera	23	1340CST 1345CST			0	0	0	0	Hail (1.00)
Kerr County									
Center Pt	23	1355CST 1400CST			0	0	0	0	Hail (0.75)
Bexar County									
3 N Leon Spgs	23	1439CST 1445CST			0	0	0	0	Hail (0.75)
Lavaca County									
2 E Ezzell	23	1500CST 1505CST			0	0	0	0	Hail (0.88)
Lavaca County									
2 E Ezzell	23	1500CST 1505CST			0	0	50K	0	Thunderstorm Wind
A severe thunderstorm produced large hail and winds that knocked over trees and damaged a barn and shed near Ezzell.									
De Witt County									
Cuero	23	1515CST 1525CST			0	0	0	0	Hail (0.88)
De Witt County									
Cuero	23	1520CST 1525CST			0	0	0	0	Hail (1.00)
De Witt County									
4 SE Cuero	23	1520CST			0	0	70K	0	Thunderstorm Wind
A downburst from a severe thunderstorm caused damage to roofs and walls of buildings near Cuero.									
Lee County									
5 E Giddings	27	1400CST 1410CST			0	0	80K	0	Thunderstorm Wind
A severe thunderstorm produced a downburst that damaged a cattle barn and tractor shed near Giddings. The storm also tore the tops out of trees.									
TEXAS, South Panhandle									
TXZ021-027									
Parmer - Bailey									
	20	1700CST			0	0	0	0	Winter Storm
	21	0100CST							
A winter storm dropped 4 inches of snow in Muleshoe (Bailey Co.) and 5 inches in Friona (Parmer Co.) as reported by NWS cooperative observers.									

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## TEXAS, South Panhandle

**TXZ028>030-033>034-040**      **Lamb - Hale - Floyd - Cochran - Hockley - Terry**

25      0900CST  
1500CST      0      0      0      0      **Winter Storm**

Heavy wet snow blanketed parts of the Texas South Plains on Christmas Day, resulting in a relatively rare white Christmas. Four to five inches of snow was reported mainly north and west of Lubbock, including Abernathy, Brownfield, Floydada, Levelland, Anton, Ropesville, Littlefield, Lockettville, and Morton. One to three inches occurred in adjacent counties, including Lubbock.

## TEXAS, Southeast

### **Jefferson County**

**Nederland**      03      0512CST      0      1      50K      **Thunderstorm Wind**

Severe thunderstorm winds blew down several utility poles and wires in Nederland. At 5:00 am, an 18 wheeler was blown off I-10 five miles west of Beaumont. The driver received minor injuries.

### **Orange County**

**Little Cypress**      03      0530CST      0      0      25K      **Thunderstorm Wind**

Power lines and trees were blown down on Highway 87 in Little Cypress due to severe thunderstorm winds.

### **Tyler County**

**Colmesnelle**      21      0015CST  
0100CST      0      0      25K      **Flash Flood**

Around four inches of rain fell in one hour, resulting in flash flooding near Colmesneil, where Highway 256 was closed due to high water.

In Ivanhoe, several homes had water reach the door frames.

### **Jasper County**

**7 E Jasper**      21      0030CST  
0100CST      0      0      20K      **Flash Flood**

Around four inches of rain fell across portions of Jasper county in less than one hour. A bridge on FM 1409 off of Highway 190 was closed.

### **Hardin County**

**Batson**      23      1815CST      0      0      20K      **Thunderstorm Wind**

Severe thunderstorm winds blew several trees and power lines down, and damaged a barn and garage in Batson.

### **Jasper County**

**10 NW Jasper**      23      1840CST      0      0      10K      **Thunderstorm Wind**

Severe thunderstorms blew trees in the Sam Rayburn area.

### **Tyler County**

**Fred**      23      1845CST      0      0      10K      **Thunderstorm Wind**

Power companies reported trees blown down on power lines.

### **Hardin County**

**Silsbee**      23      1850CST      0      0      10K      **Thunderstorm Wind**

Severe storms blew down several trees in Silsbee.

### **Newton County**

**Call**      23      1920CST      0      0      10K      **Thunderstorm Wind**

Sheriff's office reported trees down on Highway 1004.

## TEXAS, West

**TXZ057**      **Van Horn/Guadalupe Mountains Area**

22      1600MST      0      0      **Heavy Snow**  
23      0200MST

The second in the series of storm systems dumped heavy snow two days after storm #1. This system was characterized by very strong lift in a deformation zone northeast of the center of upper level low pressure. The actual passage of the upper low was relatively quiet with only some flurries in the mountains as the lift stayed ahead of the upper low to the northeast.

At Pine Springs, Guadalupe Mountains National Park rangers reported accumulations of 6 inches from the storm. Highway Department workers were able to keep U.S. Highway 62/180 open through the event.

## TEXAS, Western North

**TXZ085>089**      **Wilbarger - Wichita - Knox - Baylor - Archer**

26      0000CST  
0900CST      0      0      **Heavy Snow**

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## TEXAS, Western North

Heavy snow began falling across western parts of north Texas late Christmas night and lasted until mid-morning on the 26th. Many areas saw snow accumulations of 2 inches or more, with isolated totals approaching 4 inches.

The biggest accumulation was reported in Knox County, where Munday received 3.5 inches of snow, while much of the remainder of western north Texas saw 1 to 2 inches.

The snow melted rapidly during the late morning and afternoon as temperatures rose into the 40s.

## UTAH, North, Central and South

UTZ003>004

**Salt Lake And Toole Valleys - Southern Wasatch Front/Lehi/Provo/Nephi**

01	0600MST	0	0	10K	Heavy Snow
02	0700MST				

A storm system moving through Arizona caused light snow to fall across Utah. 1-3" accumulated in the mountains and a few valleys. Fillmore along with the eastern benches of Utah county received 3". Tooele measured 2" from this storm.

UTZ001>012-  
015>019-022>025-  
027

**Cache Valley/Utah Portion - Northern Wasatch Front/Brigham City/Ogden Bountiful - Salt Lake And Toole Valleys - Southern Wasatch Front/Lehi/Provo/Nephi - Great Salt Lake Desert And Mountains/Wendover/Snowville - Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80 - Western Unita Mountains - Wasatch Plateau/Book Cliffs - Western Unita Basin - Castle Country/Price/Castle/Dale/Emery - West Central Utah/Delta - Southwest Utah/Cedar City/Milford - Central And Southwest Mountains - Southeast Mountains/Canyonlands - Utah'S Dixie And Zion National Park - Southeast Utah/Blanding - Eastern Uinta Mountains - Eastern Uinta Basin - Tavaputs Plateau - Arches/North La Sals**

07	0400MST	1	20	200K	Winter Storm
08	1800MST				

A strong trough moved through northern Utah on the 7th. The cold moist airmass remained unstable into the 8th in a strong northwest flow. Lake-enhanced snowbands developed along the Wasatch Front on the 8th as well. Criteria snow fell across much of the state and locally strong winds occurred as well. Some peak wind gusts included: St. George airport 58 mph (50 kts) and Cedar City 45 mph (39 kts). Generally 2-5' of snow fell in the northern mountains, and 6-18" in the northern valleys. Southern Utah had from 1-3' in the mountains and 1-4" in the valleys. Some of the higher storm totals included: The Cottonwood Ski Resorts 5", Brian Head 34", Salt Lake City Avenues district 18", Logan 11", Tooele 20", South Ogden 19", Logan 11", Monticello and Vernal 8", Fillmore 5", Moab 4" and 2" in Cedar City, Blanding, Price and Dugway. Numerous power outages, traffic accidents, and tree damage occurred during this storm. There was one traffic related fatality and several injuries. F45VE

UTZ004-008-010-  
017-020

**Southern Wasatch Front/Lehi/Provo/Nephi - Wasatch Mountains South Of I80 - Wasatch Plateau/Book Cliffs - Central And Southwest Mountains - South Central Utah/Kanab/Escalante**

21	1100MST	0	0	10K	Heavy Snow
22	0500MST				

Another storm tracked through Arizona with criteria snow falling in several locations across Utah. Total snow amounts of 1-5" occurred in the mountains and some nearby valleys. Storm snowfall amounts included: Duck Creek Village and Bryce Canyon 5", and Nephi, Linton and Pleasant Grove with 3".

UTZ001>010-  
014>018

**Cache Valley/Utah Portion - Northern Wasatch Front/Brigham City/Ogden Bountiful - Salt Lake And Toole Valleys - Southern Wasatch Front/Lehi/Provo/Nephi - Great Salt Lake Desert And Mountains/Wendover/Snowville - Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80 - Western Unita Mountains - Wasatch Plateau/Book Cliffs - Sanpete/Sevier Valleys - West Central Utah/Delta - Southwest Utah/Cedar City/Milford - Central And Southwest Mountains - Southeast Mountains/Canyonlands**

23	1900MST	0	2	80K	Winter Storm
25	1000MST				

An arctic front moved down through Utah from Canada in a northerly flow aloft. Heavy snow fell across much of western Utah especially south of the Great Salt Lake. Strong easterly canyon winds also occurred along the Wasatch Front. Some peak wind gusts included: Centerville 66 mph (57 kts) and Ogden 56 mph (49 kts). Storm snowfall amounts included: Tooele 14", Milford 10", Kanosh 9", Brian Head and Magna 8", Santaquin and Randolph 5", and 4" in the Wasatch mountains, Logan and Brigham City.

UTZ007>008

**Wasatch Mountains I80 North - Wasatch Mountains South Of I80**

27	0300MST	0	0	10K	High Wind (G97)
	1500MST				

The jet stream moved right over northern Utah with high winds surfacing on the mountains. Most ski resorts were closed as the

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property		

December 1997

## UTAH, North, Central and South

lifts had to be shutdown. Some peak wind gusts included: Hidden Peak 112 mph (97 kts), Mt. Baldy at Alta 107 mph (93 kts), and Mt. Ogden 82 mph (71 kts).

## UTAH, Northeast

NONE REPORTED.

## VERMONT, North and Central

### VTZ002

#### Franklin

01 0000EST

0

0

5K

Light Snow

02 0800EST

An area of low pressure off the Middle Atlantic coast Sunday night (11/30/97) moved to near Cape Cod early Monday (12/1/97) and continued to move northeast thereafter. Snow and freezing rain developed during late Sunday evening (11/30/97) and continued in the form of periods of snow Monday (12/1/97) into early Tuesday (12/2/97). In St Albans (Franklin county) 5 inches of snow accumulated.

### VTZ001

#### Grand Isle

01 0000EST

0

0

5K

Light Snow

02 0800EST

An area of low pressure off the Middle Atlantic coast Sunday night (11/30/97) moved to near Cape Cod early Monday (12/01/97) and continued to move northeast thereafter. Snow and freezing rain developed during late Sunday night (11/30/97) and continued in the form of periods of snow Monday (12/01/97) into early Tuesday (12/02/97) with up to 5 inches accumulating.

### VTZ003>007-009

#### Orleans - Essex - Chittenden - Lamoille - Caledonia - Addison

01 0000EST

0

0

55K

Heavy Snow

02 0800EST

An area of low pressure off the Middle Atlantic coast Sunday night (11/30/97) moved to near Cape Cod early Monday (12/01/97) and continued to move northeast thereafter. Snow and freezing rain developed during late Sunday night (11/30/97) and continued in the form of periods of snow Monday (12/01/97) into early Tuesday (12/02/97). Several traffic accidents were reported.

The heaviest snow fell in the higher terrain. A few snow accumulations included:

East Haven (Essex county).....14.0 inches  
Huntington Center (Chittenden county).....12.6 inches  
Jay Peak (Orleans county).....12.0 inches  
Sutton (Caledonia county).....10.0 inches  
South Lincoln (Addison county).....9.6 inches  
Eden (Lamoille county).....9.3 inches

### VTZ008

#### Washington

01 0000EST

1

0

20K

Heavy Snow

02 0800EST

An area of low pressure off the Middle Atlantic coast Sunday night (11/30/97) moved to near Cape Cod early Monday (12/01/97) and continued to move northeast thereafter. Snow and freezing rain developed during late Sunday night (11/30/97) and continued in the form of periods of snow Monday (12/01/97) into early Tuesday (12/02/97). Several traffic accidents were reported. One person died in an automobile accident on I-89 in Middlesex, VT (Washington county).

The heaviest snow fell in the higher terrain including 10.0 inches in Waitsfield, VT (Washington county).

M20VE

### VTZ005>006

#### Chittenden - Lamoille

05 1600EST

0

0

15K

Heavy Snow

06 2000EST

A storm system over the Canadian maritimes Saturday (12/6/97) resulted in considerable moisture rotating across Vermont. The higher elevations of the northern Green Mountains received in excess of 7 inches. A few of the higher accumulations were:

Pleasant Valley (Lamoille county).....9.0 inches  
Underhill (Chittenden county).....7.5 inches

### VTZ003>004-007>008

#### Orleans - Essex - Caledonia - Washington

05 1600EST

0

0

20K

Light Snow

06 2000EST

A storm system over the Canadian maritimes Saturday (12/6/97) resulted in considerable moisture rotating across Vermont. Generally between 2 and 5 inches of snow fell across northern Vermont with locally higher amounts in the northern Green

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## VERMONT, North and Central

Mountains. A few snow accumulations included:

West Danville (Caledonia county).....5.0 inches  
East Haven (Essex county).....3.0 inches  
Albany (Orleans county).....3.0 inches  
Waitsfield (Washington county).....2.0 inches

VTZ011>012

### Rutland - Windsor

22	0000EST	0	0	25K	Heavy Snow
23	1500EST				

A storm system over the eastern Great Lakes region Monday evening (12/22/97) weakened as it moved northeast across New England during Tuesday (12/23/97). A second storm developed off the New Jersey coast early Tuesday (12/23/97) and moved northeast of the area by Tuesday night (12/23/97). The heaviest snow fell across southern portions of Vermont and a few snow accumulations included:

Ludlow (Windsor county).....7.5 inches  
East Wallingford (Rutland).....7.0 inches

VTZ004>010

### Essex - Chittenden - Lamoille - Caledonia - Washington - Addison - Orange

22	0200EST	0	0	15K	Light Snow
23	1500EST				

A storm system over the eastern Great Lakes region Monday evening (12/22/97) weakened as it moved northeast across New England during Tuesday (12/23/97). A second storm developed off the New Jersey coast early Tuesday (12/23/97) and moved northeast of the area by Tuesday night (12/23/97). Generally between 2 and 5 inches of snow fell across central and northern Vermont with the least amount along the Canadian border regions. A few snow accumulations included:

Waitsfield (Washington county).....6.5 inches  
Brookfield (Orange county).....5.0 inches  
Lower Waterford (Caledonia county).....4.5 inches  
East Haven (Essex county), Shoreham (Addison county), Burlington (Chittenden county)....4.0 inches  
Eden (Lamoille county).....4.0 inches

VTZ003-006-008-010-012

### Orleans - Lamoille - Washington - Orange - Windsor

25	0300EST 1900EST	0	0	5K	Light Snow
----	--------------------	---	---	----	------------

A storm system in the Great Lakes region early Thursday (12/25/97) moved northeast into Canada during the day. Another storm developed off the New Jersey coast early Thursday (12/25/97) and moved northeast to coastal Maine Thursday night (12/25/97). The steadyest snow fell across the eastern half of Vermont where generally between 2 and 6 inches fell with less than 2 inches elsewhere. A few specific snow accumulations were:

Brookfield (Orange county).....6.0 inches  
Rochester (Windsor county), Eden (Lamoille county), Greensboro (Orleans county)....4.0 inches  
Marshfield (Washington county).....3.0 inches

VTZ004-007

### Essex - Caledonia

25	0400EST 2000EST	0	0	20K	Heavy Snow
----	--------------------	---	---	-----	------------

A storm system in the Great Lakes region early Thursday (12/25/97) moved northeast into Canada during the day. Another storm developed off the New Jersey coast early Thursday (12/25/97) and moved northeast to coastal Maine Thursday night (12/25/97). The precipitation began as mixed snow, sleet and freezing rain but changed quickly to snow with the heaviest snow in northeast Vermont. West Burke (Caledonia county) reported 7.0 inches and Victory (Essex county) reported 8 inches. A few traffic accidents resulted. Also, a few power outages were reported in Caledonia county the night of 12/25/97.

VTZ002>003-005>012

### Franklin - Orleans - Chittenden - Lamoille - Caledonia - Washington - Addison - Orange - Rutland - Windsor

29	2200EST	0	0	240K	Winter Storm
30	2359EST				

A major storm system moved rapidly northeast from coastal North Carolina on Monday (12/29/97) to southern New Jersey late Monday night (12/29/97) and across northern New England during Tuesday (12/30/97) and into Canada Tuesday night. Snow spread across the region late Monday night (12/29/97) and continued through Tuesday (12/30/97). Across eastern and southern Vermont the precipitation became mixed with sleet and rain. A number of traffic accidents were reported.

In Vermont, the heaviest snow fell across north central and northwest portions with the greatest amount at Jay Peak with 25 inches. Elsewhere, across eastern and southern portions 7 to 12 inches fell. Specific snow accumulations included:



# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## VERMONT, North and Central

Jay Peak (Orleans county).....	25	inches
Underhill Center (Chittenden county).....	21	inches
Eden (Lamoille county).....	15.4	inches
Sheldon Springs (Franklin county).....	12	inches
Waitsfield (Washington county).....	12	inches
East Wallingford (Rutland county).....	11.5	inches
Ludlow (Windsor county).....	8.5	inches
Sutton (Caledonia county).....	7.4	inches
Brookfield (Orange county).....	6 to 8	inches
Bridport (Addison county).....	8.0	inches

### VTZ001-004

#### Grand Isle - Essex

29	2200EST	0	0	20K	Winter Storm
30	2359EST				

A major storm system moved rapidly northeast from coastal North Carolina on Monday (12/29/97) to southern New Jersey late Monday night (12/29/97) and across northern New England during Tuesday (12/30/97) and into Canada Tuesday night. Snow spread across the region late Monday night (12/29/97) and continued through Tuesday (12/30/97) with accumulations around a foot.

## VERMONT, South

### VTZ014

#### Windham

23	0000EST	0	0		Winter Storm
	1500EST				

On December 23, low pressure tracked from the Mid-Atlantic States north northeast to just south of Long Island by midday. This storm produced heavy snow across much of Windham County. In Bennington County, snowfall was much lighter with accumulations of 2 to 5 inches common. Specific snowfall totals in Windham County included: 9 inches at Brattleboro, 8 inches at Westminster, 9 inches at West Wardsboro and 7 inches at Townsend.

### VTZ013>014

#### Bennington - Windham

24	2300EST	0	0		Freezing Rain
25	1000EST				

Late Christmas Eve and early Christmas morning, light freezing rain spread across southern Vermont. Initially the freezing rain was mixed with sleet. The light coating of freezing rain produced hazardous driving conditions especially during the early morning hours. Due to the light traffic flow only scattered accidents occurred. By mid morning the light freezing rain ended in most areas as temperatures rose into the middle and upper 30s.

### VTZ013>014

#### Bennington - Windham

29	1600EST	0	0	80K	Winter Storm
30	1800EST				

On December 29 and 30, a winter storm tracked from Cape Hatteras to northern New England. This storm produced heavy snow across southern Vermont. The combination of wet snow and strong gusty winds, downed trees and power lines causing scattered power outages. Route 7 in Bennington County was closed for seven hours Tuesday morning to clear debris. At Bennington in Bennington County, a 60 foot by 30 foot section of a cinema roof was peeled off by gusting winds. At Willows Mobile Home Park in Bennington County, strong winds ripped the metal skirting off several mobile homes. Snowfall totals generally ranged from 5 to 10 inches across Bennington and Windham Counties. Some specific snowfall totals included: 11 inches at West Wardsboro in Windham County and 8 inches at Peru in Bennington County.

## VIRGIN ISLANDS

NONE REPORTED.

## VIRGINIA, East

### VAZ048>049- 060>062-065>066

#### Fluvanna - Louisa - Prince Edward - Cumberland - Goochland - Mecklenburg - Lunenburg

29	1200EST	0	0		Winter Storm
30	0000EST				

Low pressure tracked from the southeast United States to just off the North Carolina coast during Monday afternoon and night, December 29th. It spread 2 to 3 inches of snow across portions of the piedmont of central and southcentral Virginia.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property		

December 1997

## VIRGINIA, Extreme Southwest

**VAZ001>002-005>006-008 Lee - Wise - Scott - Russell - Washington**

30	0500EST	0	0	Winter Storm
31	1100EST			

A series of fast-moving upper level disturbances moved across southwest Virginia, causing heavy snow shower activity. Amounts were generally 3" to 5", with locally higher amounts in higher elevations.

## VIRGINIA, North

**VAZ025>026-029-038>042-050>051 Augusta - Rockingham - Page - Greene - Madison - Rappahannock - Fauquier - Loudoun - Orange - Culpeper**

27	1100EST	0	0	Snow
	1900EST			

Low pressure developed rapidly along the southeast U.S. coast and raced northeast to Cape Hatteras. As it moved north, bands of light to moderate wet snow accumulated between 2 and 3 inches across portions of the western Virginia piedmont and central Shenandoah Valley during the afternoon of the 27th. Isolated locations, mainly at higher elevations in Augusta and Rockingham (VAZ025>026) Counties, received between 4 and 5 inches. Most of the snow accumulated on grassy surfaces; however, many secondary roads became slushy and/or snow covered for a time. Dozens of minor accidents were reported, but injuries were few and minor.

**VAZ021-025>031-036-040>041 Highland - Augusta - Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Nelson - Rappahannock - Fauquier**

29	1800EST	0	0	Winter Storm
30	0000EST			

**VAZ037>039-042-050-052>053 Albemarle - Greene - Madison - Loudoun - Orange - Prince William - Fairfax**

29	1900EST	0	0	Winter Weather
	2200EST			

A fast-moving and rapidly deepening low pressure system raced from the South Carolina coast to east of New Jersey in eight hours. An area of moderate to occasionally heavy snow developed over western North Carolina and raced through western Virginia during the afternoon and early evening. Accumulations ranged from 4 to 8 inches between the Blue Ridge and the Shenandoah Mountain range; between 8 and 14 inches in Highland County. Higher elevations throughout western Virginia received generally between 10 and 16 inches of snow.

Blowing and drifting snow on the 30th created some travel headaches, but problems were minimal since the storm occurred during a period of low traffic between the Christmas and New Year's holidays. Accidents were few and far between, due to a combination of advanced warning and event time (a Monday evening).

East of the Blue Ridge, a mix of snow and sleet accumulated between 1 and 4 inches, with values increasing with elevation. Minor travel problems were noted through the morning of the 30th. In the interior suburbs of Washington, DC, accumulations were generally an inch or less.

## VIRGINIA, Northwest

**VAZ003 Dickenson**

05	0200EST	0	0	Snow
06	0700EST			

Snow showers left a 2 to 4 inch snow cover in the towns. Breaks Interstate Park had a maximum snow depth of 6 to 7 inches.

**VAZ003>004 Dickenson - Buchanan**

27	0100EST	0	0	Snow
	1500EST			

A snow cover of 2 to 5 inches was deposited.

**VAZ003>004 Dickenson - Buchanan**

29	1900EST	0	0	Snow
31	1900EST			

After missing the initial snow from a developing coastal storm during the daylight hours on the 29th, two days of snow showers followed. The wind blown snow deposited 3 to 8 inches. Grundy's snow depth went from an inch prior to the storm to 5 inches on the 31st.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	December 1997
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

## VIRGINIA, Southwest

**VAZ007-010>011-014-017>020-024-035**      **Tazewell - Bland - Giles - Montgomery - Floyd - Craig - Alleghany - Bath - Rockbridge - Amherst**

27      0200EST  
2100EST      0      0      **Heavy Snow**

Moderate to occasionally heavy snow developed in southwestern Virginia during the early morning hours on the 27th and continued well into the evening hours. Snow accumulations were mostly from 4 to 7 inches. Hazardous road conditions resulted in numerous traffic accidents.

**VAZ007-009>010-012>013-015>016**      **Tazewell - Smyth - Bland - Wythe - Pulaski - Grayson - Carroll**

29      0730EST  
2000EST      0      0      **Heavy Snow**

Moderate to heavy snow developed during the morning hours on the 29th and continued into the evening hours. Snow accumulations were generally in the 5 to 10 inch range. Hazardous road conditions resulted in numerous traffic accidents.

**VAZ011-014-017>020-022>024**      **Giles - Montgomery - Floyd - Craig - Alleghany - Bath - Roanoke - Botetourt - Rockbridge**

29      0830EST  
2100EST      0      0      **Heavy Snow**

Moderate to heavy snow developed during the morning hours on the 29th and continued into well into the evening hours. Snow accumulations were generally in the 6 to 12 inch range. Hazardous road conditions resulted in numerous traffic accidents.

**VAZ032>035-043>045**      **Patrick - Franklin - Bedford - Amherst - Henry - Pittsylvania - Campbell**

29      0830EST  
2200EST      0      0      **Heavy Snow**

Moderate to heavy snow developed during the morning hours on the 29th and continued into the evening hours. Snow accumulations were generally in the 5 to 8 inch range. Hazardous road conditions resulted in numerous traffic accidents.

## WASHINGTON, Northeast

NONE REPORTED.

## WASHINGTON, Northwest

### **Snohomish County**

**Snohomish**      08      1510PST      0      0      **Funnel Cloud**

A funnel cloud was spotted by two members of the public and a police cadet.

**WAZ011**

### **Southwest Interior**

14      1000PST  
1300PST      0      0      **High Wind (G41)**

About 5000 homes lost power and I-5 was temporarily closed as sustained winds of 35 mph blew over most of Thurston County.

**WAZ009-013**

### **Admiralty Inlet Area - Eastern Strait Of Juan De Fuca**

15      1130PST      0      0      **High Wind (G40)**

Sustained winds were estimated at 40 knots at Port Townsend.

### **Grays Harbor County**

**5 S Westport to 4.7 S Westport**      22      2315PST  
2317PST      0.3      15      0      0      **Tornado (F0)**

The weak tornado caused little damage. It ripped up a section of fencing and dropped it 25 ft from its original location and some other debris was blown around.

## WASHINGTON, Southeast

**WAZ025**

### **East Slopes Southern Cascades**

06      0700PST      0      0      **Fog**  
08      1200PST

Freezing fog caused ice to build up on power lines in Klickitat county. This caused power outages for as many as 4100 customers over a three day period.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage		

December 1997

## WASHINGTON, Southwest

**WAZ040**

**Southern Cascade Foothills**

**22 2000PST**

**0**

**0**

**Heavy Snow**

**23 0100PST**

A weak Pacific front reached Southwest Washington with enough cold air trapped in lower elevations to drop up to two inches of snow in parts of Clark county before turning to rain.

## WEST VIRGINIA, East

**WVZ052>053**

**Berkeley - Jefferson**

**27 1600EST**

**0**

**0**

**Snow**

**2000EST**

Low pressure developed rapidly along the southeast U.S. coast and raced northeast off Cape Hatteras. As the low moved north, bands of light to moderate wet snow accumulated around 1 or 2 inches across northeastern West Virginia during the late afternoon and early evening of the 27th. Most of the snow accumulated on grassy surfaces; however, many secondary roads became slushy and/or snow covered for a time. Five accidents were reported along Interstate 81 in eastern Berkeley Co (WVZ052); injuries were minor.

**WVZ048>055**

**Grant - Mineral - Hampshire - Morgan - Berkeley - Jefferson - Pendleton - Hardy**

**29 1900EST**

**0**

**0**

**Winter Storm**

**30 0000EST**

A fast-moving and rapidly deepening low pressure system raced from the South Carolina coast to east of New Jersey in eight hours. An area of moderate to occasionally heavy snow developed over western North Carolina during the morning and raced through eastern West Virginia during the afternoon and early evening. Across the eastern panhandle, accumulations ranged from 5 to 9 inches. Heavier snow fell in the Potomac Highlands, with totals ranging from 9 to 13 inches. Higher mountainous terrain received up to 15 inches. Additional light snow continued over the far western portion of Grant, Mineral, and Pendleton Cos (WVZ048>049-054) into New Year's Eve.

Blowing and drifting snow on the 30th created some travel headaches, but problems were minimal. However, a notable accident occurred outside of Martinsburg (WVZ052) when a tractor-trailer flipped along Interstate 81. The storm occurred during a period of low traffic volume between the Christmas and New Year's holidays.

## WEST VIRGINIA, North

**WVZ023-041**

**Preston - Tucker**

**06 2000EST**

**0**

**0**

**Heavy Snow**

**07 1000EST**

Nine inches of snow was reported at Canaan Valley State Park Resort.

Strong, moisture-laden westerly winds up the Allegheny Plateau led to heavy snowfall amounts in the higher elevations of the northern West Virginia Mountains.

**WVZ023-041**

**Preston - Tucker**

**29 1200EST**

**0**

**0**

**Heavy Snow**

**30 0500EST**

Between 5 and 8 inches of snow fell across the county. The heaviest snowfall was confined to the higher elevations. Eight inches of snow was reported in Horse Shoe. In Aurora, 8.5 inches fell.

A storm system moved from the gulf coast states slowly north along the eastern seaboard and intensified. Heavy snow fell across parts of northern West Virginia. The heaviest snow was confined to the mountains.

## WEST VIRGINIA, Southeast

**WVZ042>045**

**Mercer - Summers - Monroe - Greenbrier**

**05 0600EST**

**0**

**0**

**Heavy Snow**

**06 1800EST**

Moderate to heavy snow developed during the morning hours on the 5th and continued to the early evening hours on the 6th. Snowfall amounts were generally from 4 to 8 inches with local amounts near a foot. Hazardous road conditions resulted in numerous minor traffic accidents.

**WVZ042>045**

**Mercer - Summers - Monroe - Greenbrier**

**27 0200EST**

**0**

**0**

**Heavy Snow**

**2100EST**

Moderate to heavy snow developed across southeastern West Virginia during the early morning hours on the 27th and continued into the evening hours. Snowfall accumulations were generally from 4 to 7 inches. Hazardous road conditions resulted in numerous accidents.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage		

December 1997

## WEST VIRGINIA, Southeast

### **WVZ042>045 Mercer - Summers - Monroe - Greenbrier**

**29 0900EST 0 0 Heavy Snow**  
**30 1000EST**

Moderate to heavy snow developed during the morning hours on the 29th and continued through the morning hours on the 30th. Snow accumulations were generally in the 10 to 20 inch range. Hazardous road conditions resulted in numerous traffic accidents.

## WEST VIRGINIA, West

### **WVZ036>039-046>047 Fayette - Nicholas - Webster - Upshur - Pocahontas - Randolph**

**04 2200EST 0 0 Snow**  
**06 0700EST**

Snow showers left a 3 to 6 inch snow cover, except 6 to 12 inches above 3000 feet.

### **WVZ015-027 Kanawha - Clay**

**05 1900EST 0 0 Snow**  
**06 0700EST**

A narrow band of snow showers deposited around 4 inches of snow in the vicinity of Elkview, Pinch, Clendenin, and Clay.

### **WVZ013-015-026>028-033>040-046>047 Lincoln - Kanawha - Boone - Clay - Braxton - McDowell - Wyoming - Raleigh - Fayette - Nicholas - Webster - Upshur - Barbour - Pocahontas - Randolph**

**27 0100EST 0 0 Snow**  
**1600EST**

A 2 to 4 inch snowfall was common.

### **WVZ027>028-032>040-046>047 Clay - Braxton - Taylor - McDowell - Wyoming - Raleigh - Fayette - Nicholas - Webster - Upshur - Barbour - Pocahontas - Randolph**

**29 1100EST 0 0 Heavy Snow**  
**31 1200EST**

The first heavy snow of the season hit the mountains and the immediate western slopes, but missed the Interstate 79 corridor from Charleston to Clarksburg. The developing coastal storm dumped 10 to 20 inches of new snow over the mountainous counties. The heavy snow Monday afternoon, the 29th, had a sharp western edge. Not a single flake reached Charleston then. The snow diminished that evening, but persistent snow showers were seen by the predawn hours of the 30th. The wind blown snow showers continued into the 31st. The total snow cover by dawn on New Years Eve was 6 to 8 inches in the eastern portions of Clay, Braxton, Wyoming, and McDowell Counties. The mountains of Webster, Randolph, and Pocahontas Counties had an averaged snow depth of around 2 feet. Snowshoe had 33 inches on the ground, Bartow 22 inches, Hacker Valley 14 inches, both Elkins and Beckley had 12 inches, and Summersville measured 9 inches.

## WISCONSIN, Extreme Southwest

NONE REPORTED.

## WISCONSIN, Northeast

### **WIZ005 Vilas**

**30 0000CST 0 0 Heavy Snow**  
**31 0600CST**

Cold air moving across the relatively warmer waters of Lake Superior produced lake effect snow across far northern Wisconsin. The northwest corner of Vilas county received 5 to 9 inches of snow.

## WISCONSIN, Northwest

### **WIZ001>004 Douglas - Bayfield - Ashland - Iron**

**04 2130CST 0 0 Heavy Snow**  
**06 0440CST**

An intermittent lake effect snow event produced snow amounts ranging from about a half foot on the Bayfield Peninsula to around 20 inches in the Hurley area.

### **WIZ001>004 Douglas - Bayfield - Ashland - Iron**

**29 1600CST 0 0 Heavy Snow**  
**31 0445CST**

The Lake Superior snow belt received snow amounts ranging from a half foot in northeastern Douglas County to around a foot in northern Iron County.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property	Crops	Character of Storm
					Killed	Injured			

December 1997

## WISCONSIN, Southeast

**WIZ068>069**

**Green - Rock**

**24 1300CST  
2100CST**

**0 0**

**Heavy Snow**

Low pressure moving east across central Illinois dumped a narrow band of snow ranging from 6 to 6.5 inches deep over a small part of southcentral Wisconsin from around Brodhead (Green Co.) to Footville (Rock Co.). Most of the snow fell between 1500 and 1900 CST. Otherwise, southcentral and southeast Wisconsin received 2 to 5 inches in this event. The axis of the greatest snow accumulations extended from around Darlington (Lafayette Co.) east/northeast to Milwaukee. There were probably at least 300 motor vehicle accidents attributed to snow covered or slippery roads across southcentral and southeast Wisconsin.

## WISCONSIN, Southwest

NONE REPORTED.

## WISCONSIN, West

NONE REPORTED.

## WYOMING, Central and West

**WYZ009-011>012-  
026**

**South Big Horn Basin - Wind River Mtns East - Lander Foothills - Western Big Horn Mountains**

**01 2000MST  
02 0800MST**

**0 0**

**Heavy Snow**

15 inches of new snow in Sinks Canyon, southwest of Lander; 8 inches in downtown Lander; up to 10 inches in the Big Horn Mountains; 6 inches in Thermopolis. General snowfall amounts between 3 and 6 inches over much of the Wind River Basin.

**WYZ008>009-016-  
022**

**Owl Creek Mountains - South Big Horn Basin - Star Valley - Rock Springs/Green River**

**08 2100MST  
09 2100MST**

**0 0**

**Winter Storm**

Storm began Monday night and ended Tuesday night. 6 to 15 inches of new snow in the Star Valley; near a foot of new snow in Thermopolis, over a foot in the Wind River Canyon. Around a half foot of new snow in the Rock Springs/Green River area with considerable blowing and drifting. Wind gusts to 43 mph in Green River.

**WYZ009-012>013-  
015**

**South Big Horn Basin - Lander Foothills - Wind River Basin - Natrona**

**18 2000MST  
19 0800MST**

**0 0**

**Heavy Snow**

Began Thursday evening and ended Friday morning. Up to 6 or 7 inches of new snow in upslope-favored areas.

**WYZ006>007-013-  
028**

**Teton/Mountains - Jackson Valley - Wind River Basin - East Johnson**

**27 1200MST  
1555MST**

**0 0**

**High Wind (G100)**

Gust to 115 mph recorded on Rendezvous Peak in the Teton Mountains, average wind speeds of 73 mph.

Trees down, power outages in Wilson and Jackson Hole. Unofficial wind gust to 70 mph recorded on the Buffalo ASOS.

Unofficial gust to 61 mph at the Riverton NWS office.

## WYOMING, Extreme Southwest

NONE REPORTED.

## WYOMING, North Central

NONE REPORTED.

## WYOMING, Northeast

**WYZ054>056**

**Gillette - South Campbell - Moorcroft**

**27 1200MST  
28 0100MST**

**0 0**

**Winter Storm**

**WYZ057>058**

**Wyoming Black Hills - Weston**

**27 1200MST  
28 0100MST**

**0 0**

**Heavy Snow**

A strong low pressure system moved through the Northern Plains resulting in snow, very gusty winds, and below zero wind chills. The area hit hardest by the storm was extreme northeast Wyoming. Snow amounts in this area ranged from four to eight inches. Elsewhere snow amounts were one to two inches but combined with wind gusts over 50 mph visibilities were occasionally reduced.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
December 1997									
<b>WYOMING, Northeast</b>									
			to less than one half mile.						
<b>WYZ057</b>			<b>Wyoming Black Hills</b>						
	<b>29</b>	<b>1800MST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>30</b>	<b>0500MST</b>							
	An upper level disturbance moved through extreme northeast Wyoming and produced upslope freezing rain and snow over the Wyoming Black Hills. Snow amounts were four to six inches. Northwest winds of 15 to 30 mph resulted in below zero wind chills and blowing snow reducing visibilities to less than one half mile.								
<b>WYOMING, Southeast</b>									
<b>WYZ065</b>			<b>Laramie Valley</b>						
	<b>08</b>	<b>1700MST</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
	<b>09</b>	<b>1100MST</b>							
	Heavy snow occurred over the Laramie valley region with Laramie reporting 10 inches of snow. The heaviest snow amounts were localized and confined to the vicinity of Laramie.								
<b>WYZ065&gt;066-069&gt;070</b>			<b>Laramie Valley - Laramie Range - Cheyenne Foothills - Pine Bluffs</b>						
	<b>08</b>	<b>1700MST</b>			<b>1</b>	<b>36</b>	<b>100K</b>	<b>0</b>	<b>Winter Storm</b>
	<b>11</b>	<b>1830MST</b>							
	Winter storm conditions caused by fresh snow and strong winds contributed to 76 accidents from 2200 12/08 to 1700 12/10 in Laramie and Albany counties. 17 of the accidents involved injuries, the exact number of which are not known. 21 passengers on a bus were injured 12/10 when the bus rear-ended an eastbound semi-truck approximately 14 miles west of Cheyenne. The accident was attributed to icy roads and blowing snow. On 12/11, a 73-year-old woman died while trying to reach her ranch on foot after her vehicle became disabled. Her body was located in an abandoned mobile home approximately one-half mile from her vehicle, near the Horse Creek Ranch along the county line between Laramie and Albany counties. The temperature at the time was approximately 20 degrees below zero with wind chills in the vicinity of 70 degrees below zero. F73OU								
<b>WYZ062&gt;064-066&gt;067-069</b>			<b>North Carbon - Snowy Range - North Laramie Range - Laramie Range - Platte - Cheyenne Foothills</b>						
	<b>16</b>	<b>2200MST</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>High Wind (G56)</b>
	<b>17</b>	<b>0800MST</b>							
	Strong winds occurred over and adjacent to the Snowy Range and Laramie Range. Sustained winds were 45 to 50 MPH in the mountains and 35 to 40 MPH in the lower elevations. Arlington (38 NW Laramie) had a peak gust of 64 MPH at 2245. A National Weather Service employee reported a peak gust of 62 MPH 15 W Cheyenne at 0508. Bordeaux (10 SE Wheatland) had a peak gust of 61 MPH at 0037. Cheyenne had a peak gust of 59 MPH at 0642.								
<b>WYZ062&gt;064-066&gt;067</b>			<b>North Carbon - Snowy Range - North Laramie Range - Laramie Range - Platte</b>						
	<b>27</b>	<b>0100MST</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>High Wind (G70)</b>
		<b>1700MST</b>							
	Strong winds occurred over and adjacent to the Snowy Range and Laramie Range. A peak gust of 63 MPH was recorded 10 SE Wheatland at 0730. Arlington (38 NW Laramie) reported sustained winds of 41 MPH at 0500. Vedauwoo (30 W Cheyenne) reported sustained winds of 43 MPH at 0500.								
<b>WYZ060-065&gt;068</b>			<b>Niobrara - Laramie Valley - Laramie Range - Platte - Goshen</b>						
	<b>27</b>	<b>1100MST</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Blizzard</b>
	<b>28</b>	<b>0600MST</b>							
<b>WYZ069&gt;070</b>			<b>Cheyenne Foothills - Pine Bluffs</b>						
	<b>27</b>	<b>1100MST</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>High Wind (G58)</b>
	<b>28</b>	<b>0600MST</b>							
	Ground blizzard conditions were created by strong winds blowing over freshly fallen snow. Near zero visibility was reported at Horse Creek at 1150 and on Wyoming highway 20 between Keeline and Lusk at 1815. Vehicles were stranded around Lusk, and hotels and churches in Lusk were filling up with stranded travelers. Between 2130 and 2215, area roads were closed by officials in Cheyenne, Laramie, Wheatland and Torrington due to blowing and drifting snow coupled with poor visibilities. Sustained winds of 45 MPH were recorded 32 NE Cheyenne between 2000 and midnight, and Cheyenne recorded a wind gust of 67 MPH at 1056.								

## STORM DAMAGE CATEGORIES

## REFERENCE NOTES

1	Less than \$50	0 / Blank	None reported.
2	\$50 to \$500	*	Miles instead of yards.
3	\$500 to \$5,000	**	Yards instead of miles.
4	\$5,000 to \$50,000	@	Includes heavy sleet storm.
5	\$50,000 to \$500,000	#	Freezing drizzle and freezing rain, commonly known as glaze.
6	\$500,000 to \$5 Million	=	Report incomplete.
7	\$5 Million to \$50 Million	= =	Report not received.
8	\$50 Million to \$500 Million		
9	\$500 Million to \$5 Billion	o/c	Indicates Crop Damage amount is included in the value give for property damage.

When reports are not received or are incomplete, the Storm Summary National Death and Injury totals may also be incomplete.

## Definition of Fujita Tornado Scale ( F Scale )

(F0) Gale tornado (40-72 mph) : Light damage; Some damage to chimneys; break branches off trees; push over shallow-rooted trees; signs and billboards damaged.

(F1) Moderate tornado (73-112 mph): Moderate damage; The lower limit (73 mph) is the beginning of hurricane wind speed; peel surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads.

(F2) Significant tornado (113-157 mph): Considerable damage; Roofs torn from frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.

(F3) Severe tornado (158-206 mph): Severe damage; Roofs and some walls torn from well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.

(F4) Devastating tornado (207-260 mph): Devastating damage; Well-constructed houses leveled; structure with weak foundations blown off some distance; cars thrown and large missiles generated.

(F5) Incredible tornado (261-318 mph): Incredible damage; Strong frame houses lifted from foundation and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100 meters; trees debarked; incredible phenomena will occur.

(F6-F12) (319 mph to Mach 1, the speed of sound): The maximum wind speeds of tornadoes are not expected to reach the F6 wind speeds.

*(F0+F1) Weak Tornado*

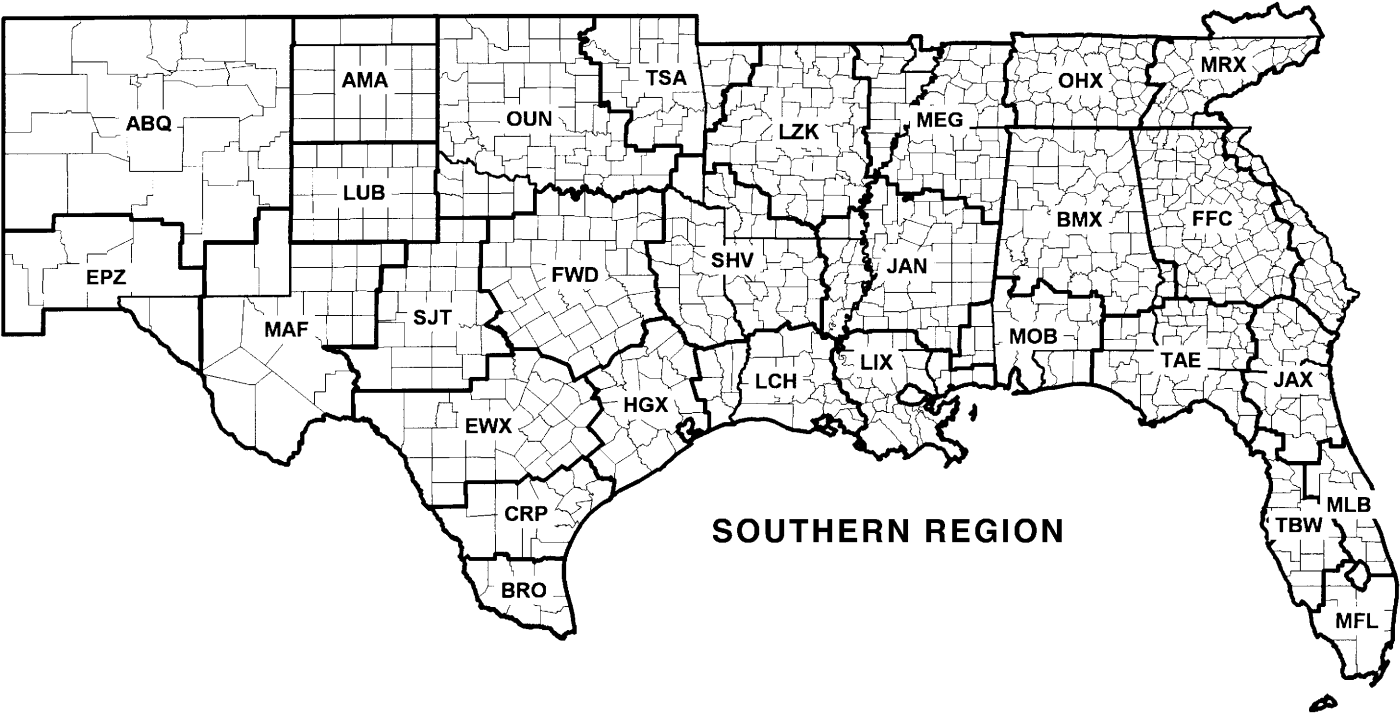
*(F2+F3) Strong Tornado*

*(F4+F5) Violent Tornado*

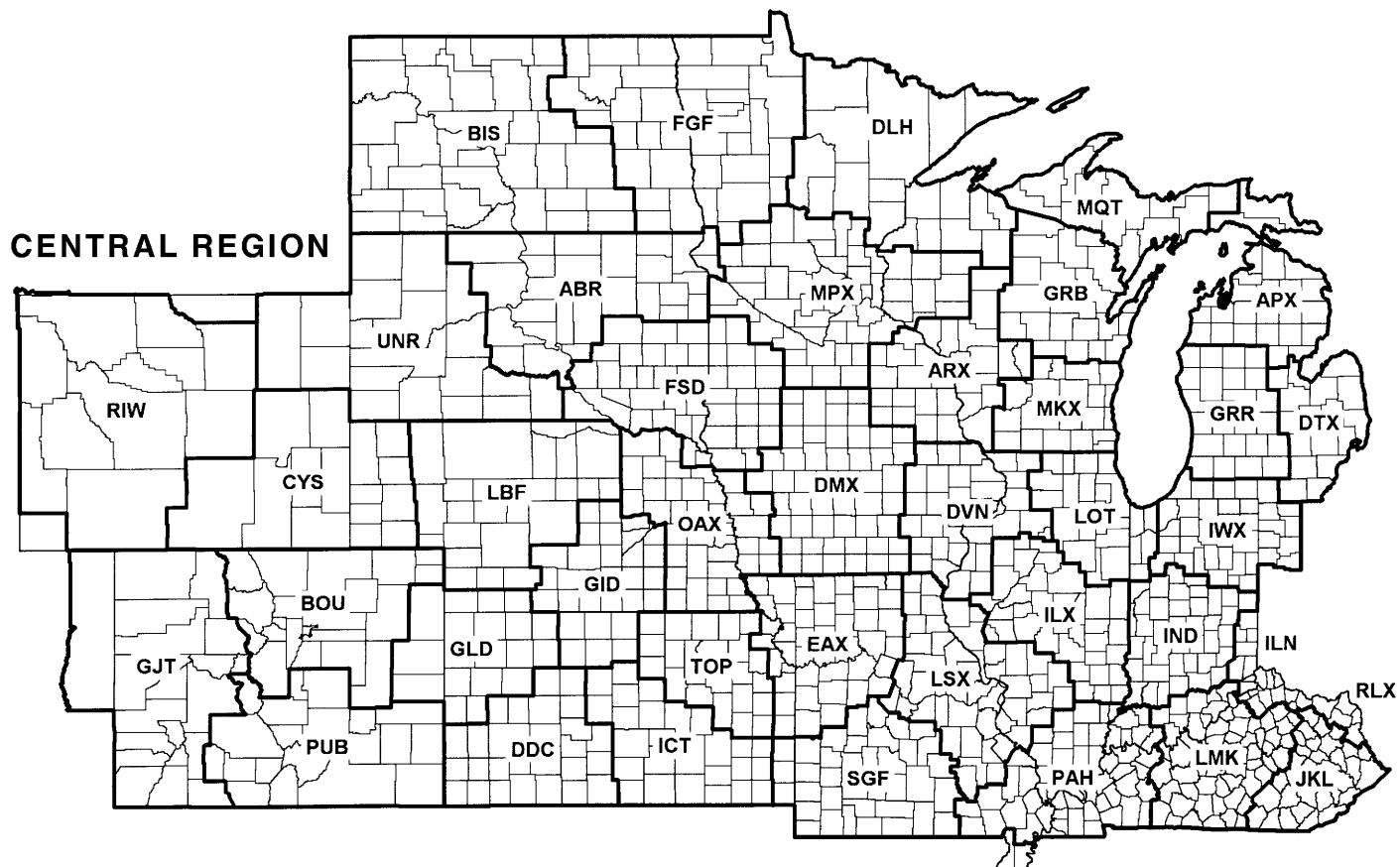
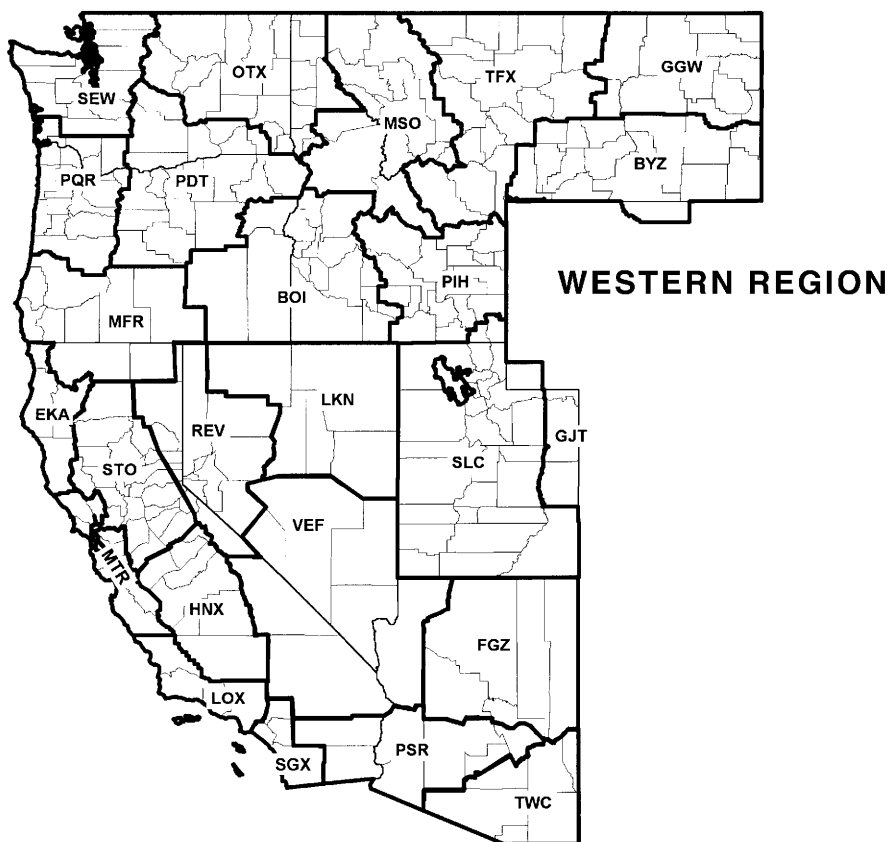




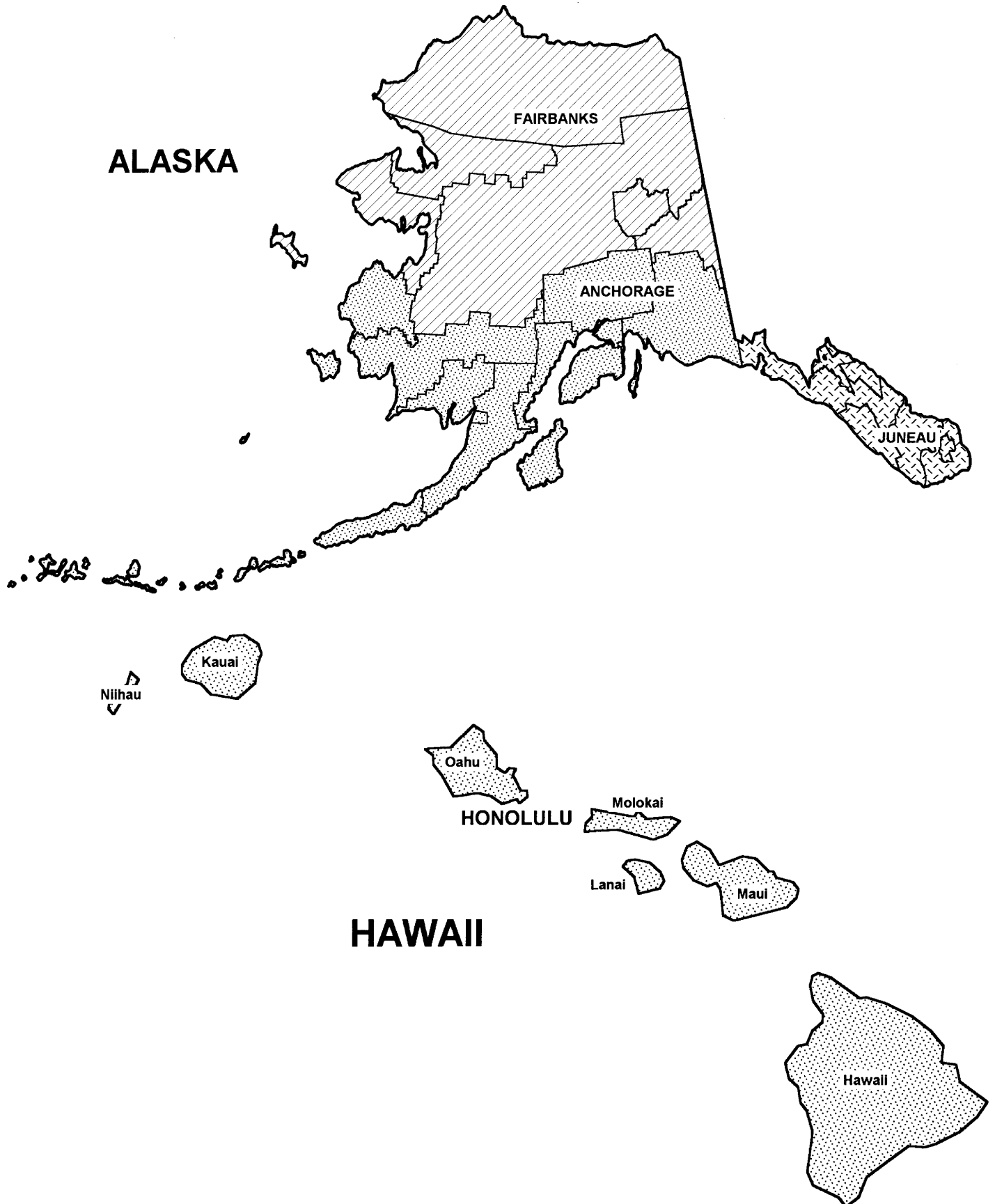
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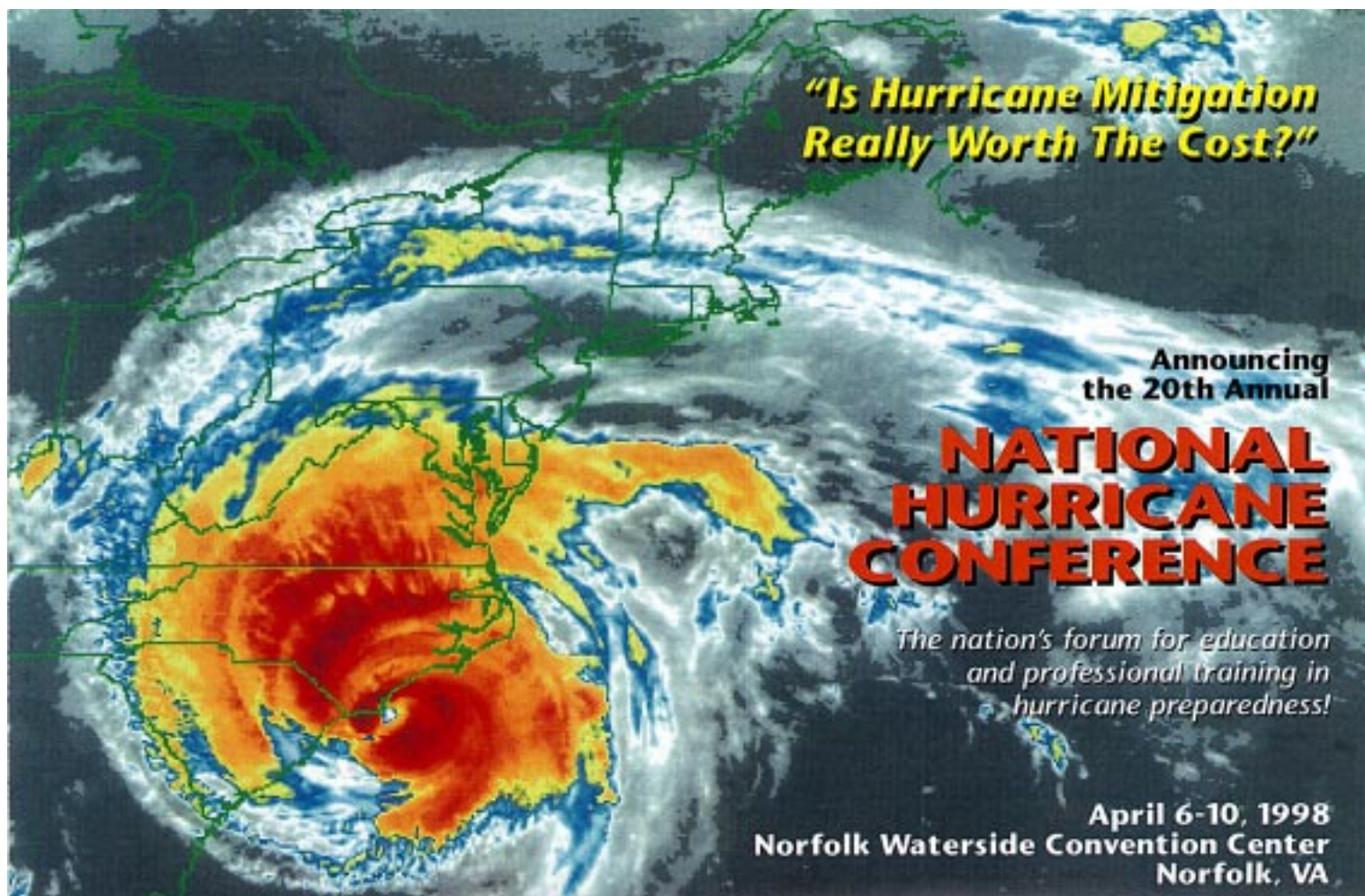


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